TEXTILE WORLD

A McGraw-Hill Publication ..... **JUNE • 1953**

Nylon-Throwing Quality Control

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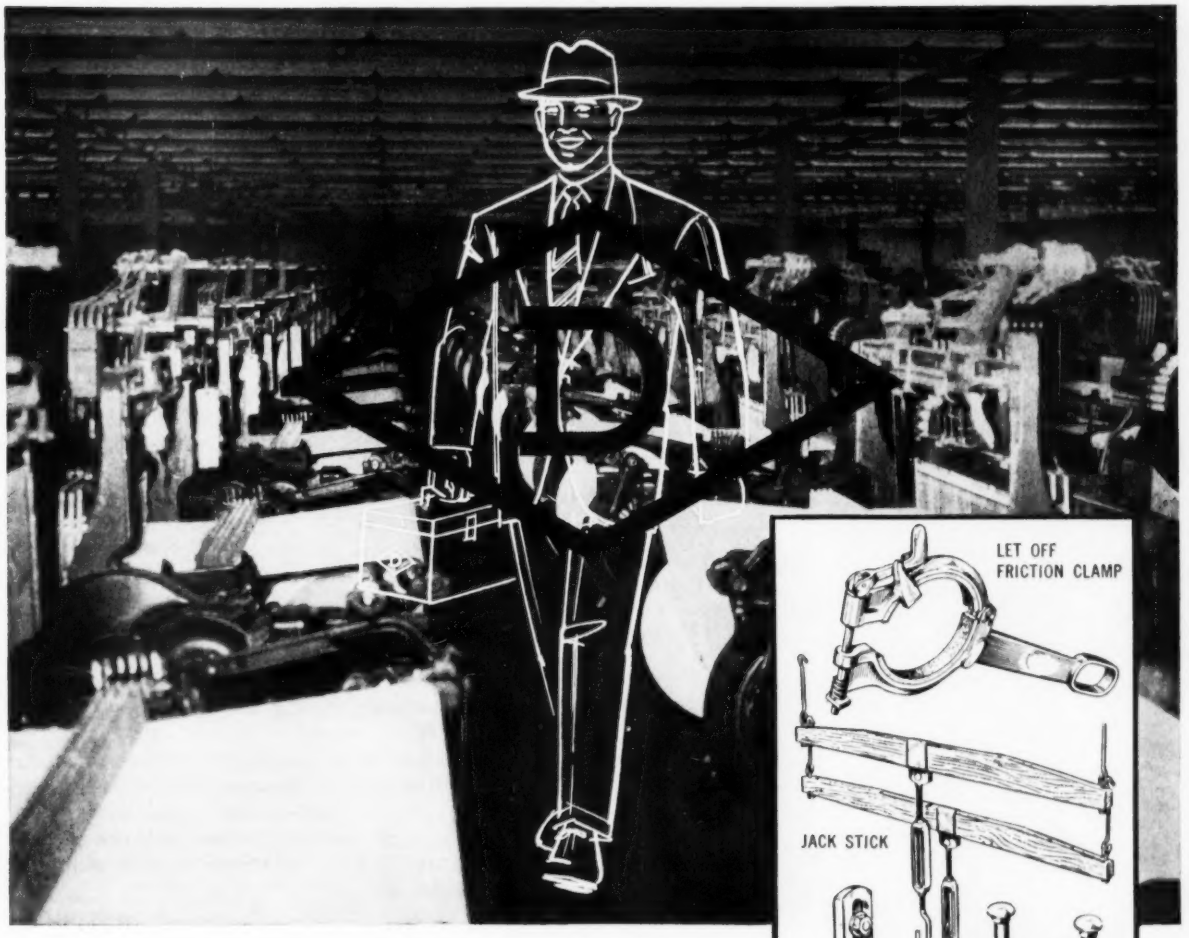

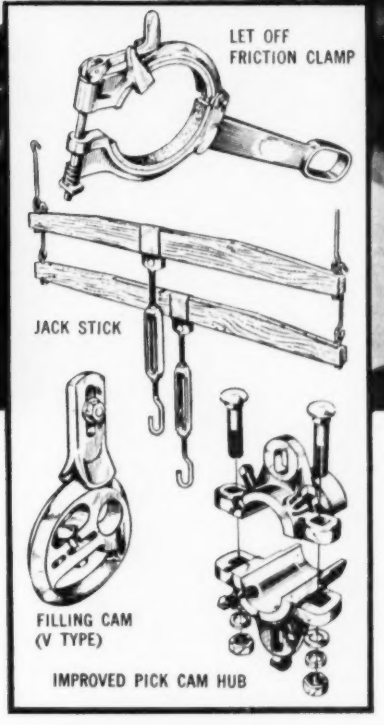

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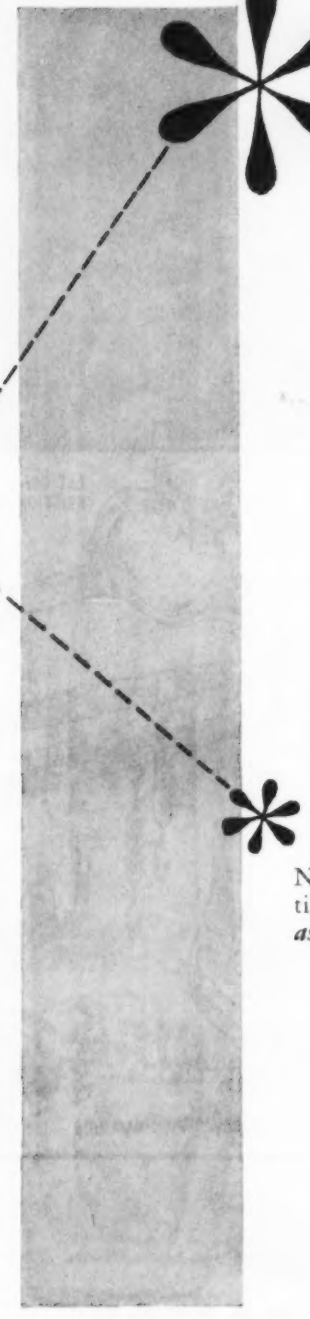

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THE Long-Range VIEW

Two Keys to Continued Success

In a recent issue of the *New York Times Book Review*, a book called *The Future of the West*, by J. G. de Beus, Minister of the Netherlands Embassy in Washington, was discussed. The theme of the book seemed to be that creativeness can save Western civilization from the doom prophesied on every hand.

In the operation of a textile mill, where day-to-day decisions and both short-range and long-range plans have to be made, men charged with responsibilities for these functions may view the centuries-long evaluations of historians with a cold eye. It seems to us, however, that an important lesson for the textile industry and for any individual mill can be drawn from Mr. de Beus's theme. If creativeness can save a whole civilization comprising some half a billion people, it sounds like good medicine for an industry that comprises a very few million and a mill that comprises only a few hundred people.

By creativeness, we assume that Mr. de Beus means producing something new, bringing into existence something that was not in existence before. It may be a new work of art, a new drug, a new explosive, a new machine, a new cloth design, or anything else.

We are not enough of a historian to attempt to agree or disagree with Mr. de Beus in his evaluation of creativeness and its effect on civilization, but we do agree wholeheartedly that creativeness and ingenuity in applying new creations can keep the textile industry and any particular mill in business.

Many cotton and rayon mills have found it possible to operate profitably in New England and the Middle Atlantic states, although so many others have found it necessary to move South. We don't pretend to know the complete answer to why some mills can operate successfully under relatively adverse conditions, but in some cases we do know that creativeness is a big factor. On the other side of the picture, we were told some years ago by the president of a mill in Georgia: "Our product is an old-line, standard product. We don't have to spend money for research." That mill, already located in the South, could find no place to migrate to. It has now folded up.

Several times recently we have heard some of the largest and best-known companies in the United States discuss some of their business expectations for the next few years. In every case, the company expects to continue to grow at a rate considerably faster than the country's population growth. What is perhaps more significant is that each of those companies expects a large proportion of its production and sales to be in products it does not manufacture now. One company expects 20%, another 50%, and a third one 80% of its total business ten years from now to be in such products. At present they have no idea what some of those products will be, but they know they will come up with them.

Visitors to the recent Knitting Arts Exhibition in Atlantic City were struck by the predominance of tricot knitting machines. As everyone knows, tricot has all but taken over the market for ladies' underwear fabrics. A few days after the exhibition, we were shown by the research department of a well-known mill some tricot fabrics that are almost certain to invade the fancy dress-goods field now dominated by woven fabrics.

Also quite recently, a tire-cord manufacturer predicted to us that nylon stands a good chance of replacing rayon in tire-cord fabric as rayon replaced cotton.

The point in citing these instances is to emphasize the fact that, whether or not you worry about the fate of civilization, you have no choice in worrying about creativeness as it applies to the textile industry. Call it creativeness, inventiveness, research, engineering, or anything else you prefer; the truth remains that new products, new machines, and new ways of doing things and making things are certainly the continuing salvation of the textile industry and of any individual mill.

One point that must be kept in mind, however, is usefulness.

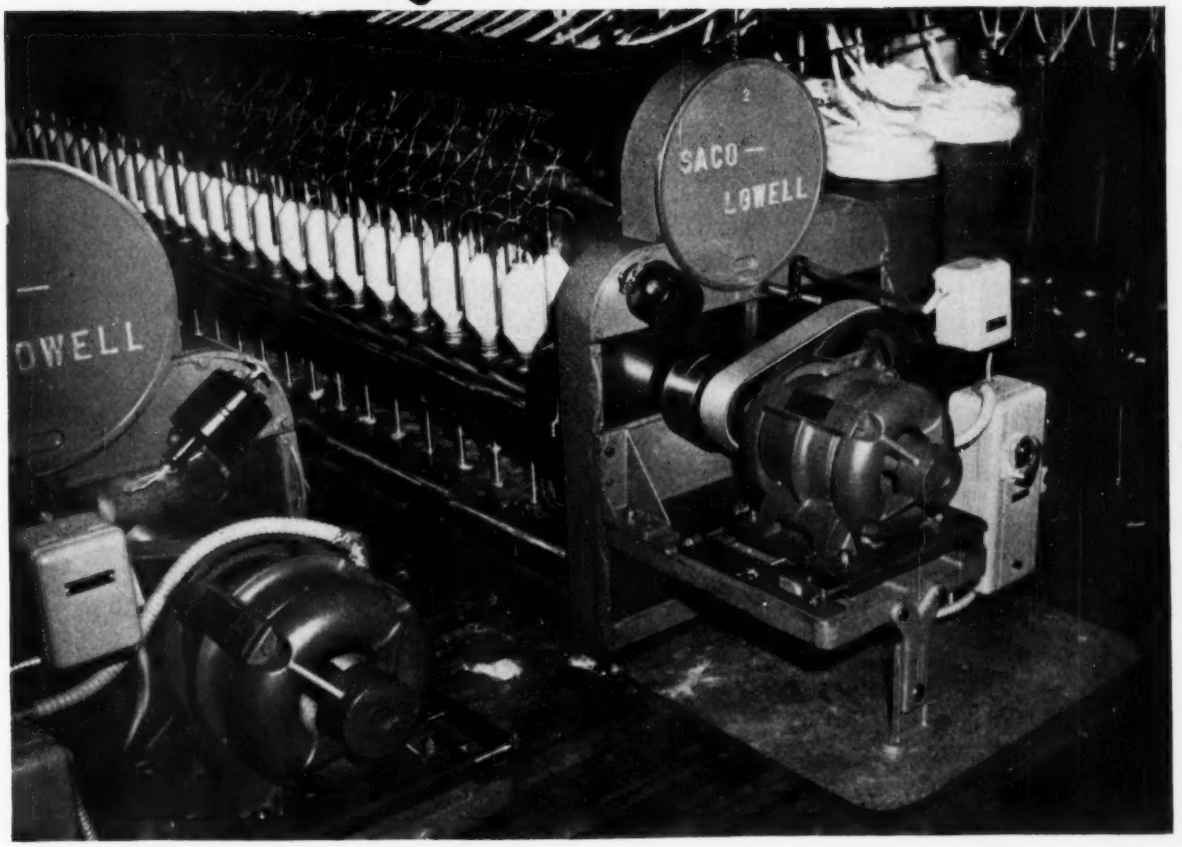
On the plane of thinking practiced by the historian and philosopher, one of the criticisms most often thrown at Western civilization, and particularly at the United States, is that of pragmatism and materialism. We wrongly gauge everything, this criticism holds, by its usefulness.

So far as the textile industry is concerned, that criticism is patent nonsense. Every art and science, no matter how obtuse and abstract, lives because of its usefulness in some way or another. Creativeness as applied to the textile industry must have as its purpose the production of more goods or better goods at a price that makes them usable by people.

The mill that wants to continue profitable operation in the years to come can find no better insurance than to place a premium on creativeness tempered by realistic usefulness.

A. M. Thomas

Rhoads Engineered ROVING FRAME DRIVES



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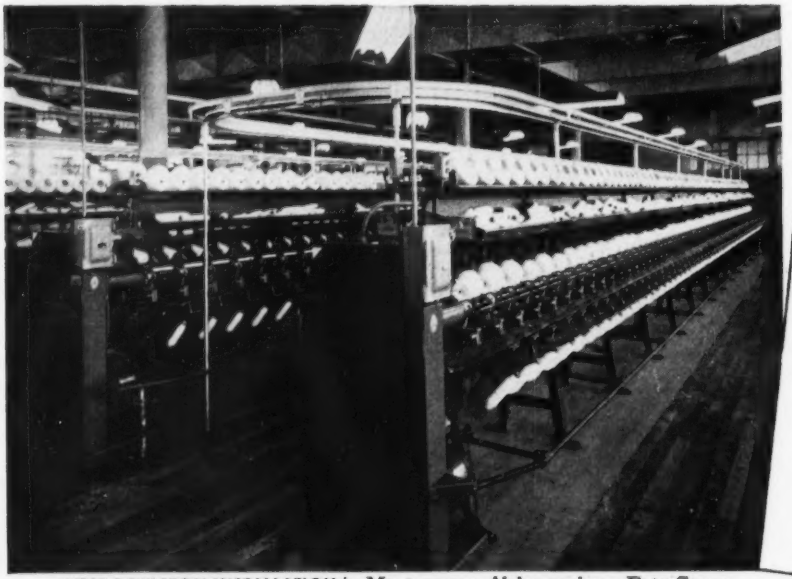

WEST BOYLSTON INSTALLATION in Montgomery, Alabama shows Roto-Coner Winders used to both inspect and to package yarn for shipment. Streamlined surfaces of these winders are easy to clean, allowing little lint to collect. Roto-Coner Spindles start at the touch of a finger. Threading is simple, supply shelves close at hand.

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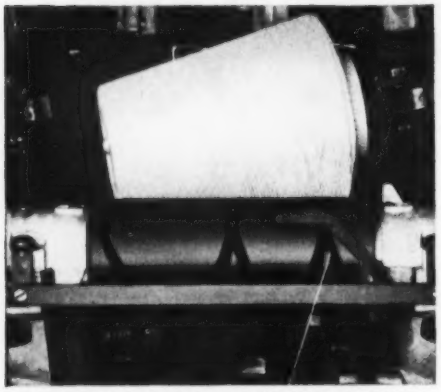

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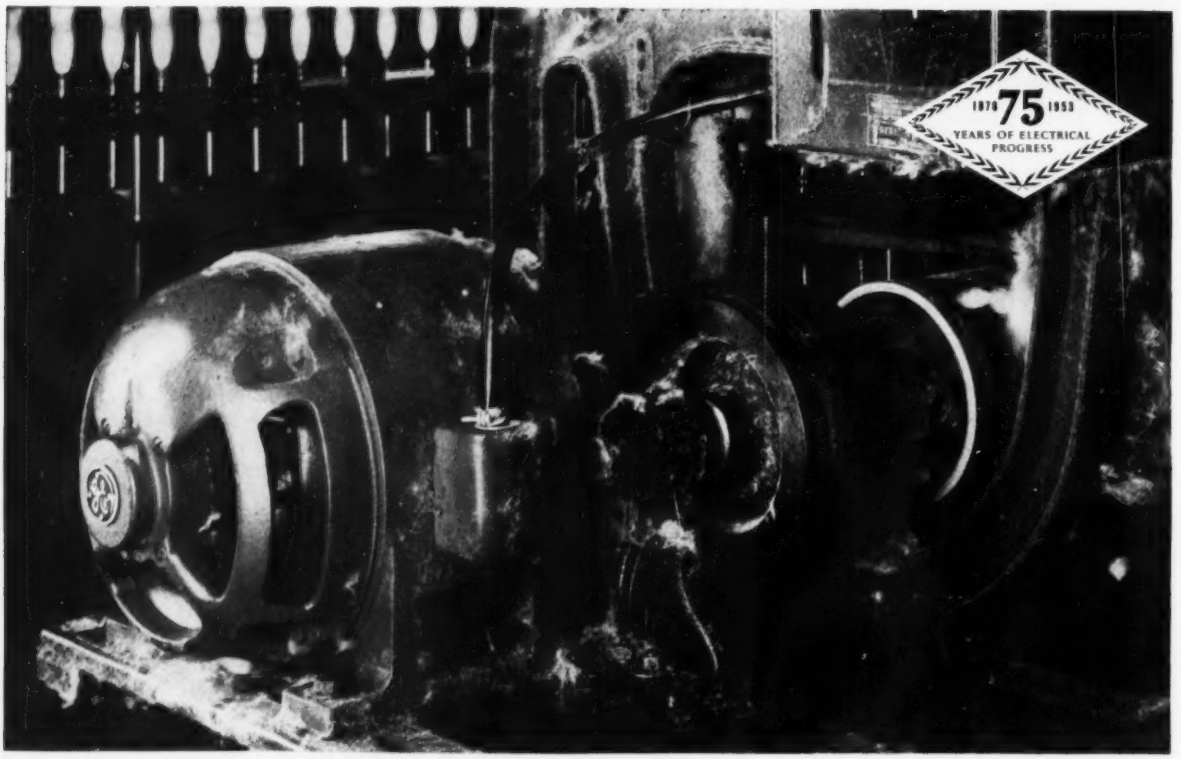
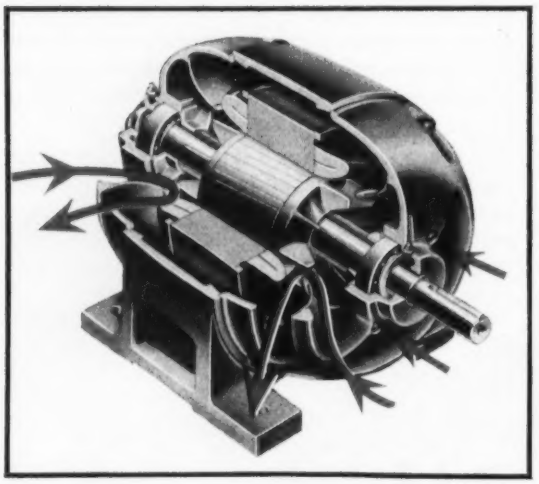


New G-E Screenless Open Textile Motor provides . . .

Quick in-out cleaning action

New cooling system assures positive lint expulsion, minimum cleaning time



The new G-E screenless open textile motor is scientifically designed to provide maximum cooling and positive lint expulsion with greater physical protection. Many combinations of endshield openings and rib widths were tested to determine the most effective self-cleaning cooling system.

Specially-contoured fans pull large volumes of cooling air through wide endshield openings. Air flows unobstructedly through shortest possible air passages, over smooth coil ends, and out discharge openings. This provides maximum cooling effectiveness and quick in-out lint action—with no lint-laden air passing through motor frame—to keep spinning frames, roving frames and pickers operating more continuously with less downtime for cleaning.

YEARS OF SERVICE—THEN *EASY* RELUBRICATION!

Bearing lubrication is no problem with this new motor. Grease reservoirs hold much more grease than the conventional "sealed" bearing. Eventually, after years of service, lubrication will be necessary to lengthen bearing life. You'll be able to do it with a grease-gun—without tearing down the motor!

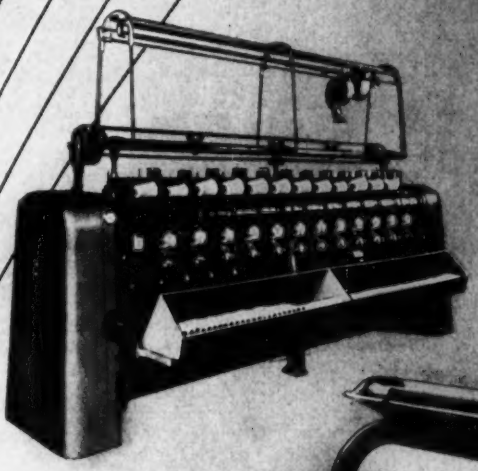
The new motor is available now in many standard and special ratings. Bulletin GEA-5837 gives full details. Contact your local G-E apparatus sales office or write General Electric Company, Schenectady, N. Y., for your copy. 654-26

You can put your confidence in—

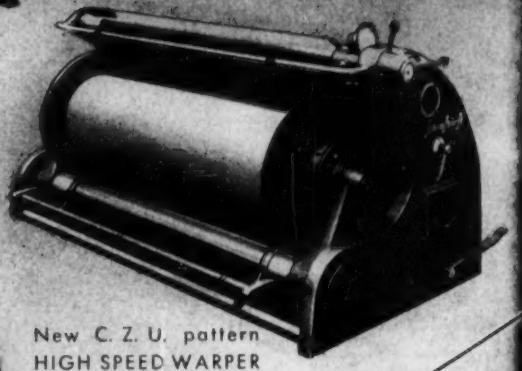
GENERAL ELECTRIC

MODERN MACHINERY FOR WINDING AND WARPING

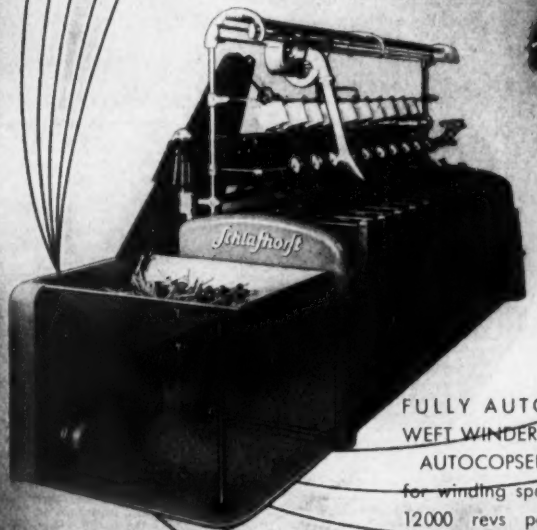
Schlafhorst



NEW GROOVED CYLINDER
CONE AND CHEESE WINDER
B. K. N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity



We also make CONE CREELS
of various types, such as f. i.
MAGAZINE CREELS
and TRUCK CREELS
with electric detectors of our
eyeboard system

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A. S. E.
for winding speeds up to
12000 revs per minute

UNIONMATEX

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

TEXTILE THERMOLIER

THE GRINNELL UNIT HEATER

proved and approved, time and again, for it's

Money-saving Air!

- Parallel openings between the web tubes permit air from the fan to pass through and keep heating element clean.
- Safety and durability assured with leak-proof tube-to-header construction.
- Maximum capacity provided at all times and annoying and destructive water hammer eliminated because built-in pitch of tubes and internal cooling leg assures continuous drainage of condensate.
- Plain thermostatic trap, the simplest and least expensive kind of trap, made practical because of Thermolier's exclusive internal cooling leg.

WEBBED U-TUBE

Whenever Textile Thermoliers go in . . . maintenance and heating costs come down! That's warm air . . . "money-saving air" . . . any mill can cash in on.

Textile Thermoliers stop heat waste and extravagant upkeep because of a special heating element. This heating element consists of a series of webbed, pitched U-tubes parallel to one another and assembled into a single header. An extension of the web on the trailing side increases the heat area, while the absence of conventional fin edges minimizes the collection of lint, fly and dust on the heating surface. Get the "money-saving" facts today.

Textile Thermoliers are used by such companies in the textile field as . . .

American Thread Company
Clover, South Carolina
American Yarn & Process Company
Mt. Holly, North Carolina
Avondale Mills
Sylacauga, Alabama
Beaver Creek Weaving Company
Boonville, North Carolina
Cannon Mills Company
Kannapolis, North Carolina
Canton Cotton Mills
Canton, Georgia
Chicopee Manufacturing Company
Manchester, New Hampshire
Clark Thread Company
Clarkdale, Georgia
Cone Finishing Company
Haw River, North Carolina
Dan River Mills
Danville, Virginia
Dora Yarn Mills
Cherryville, North Carolina
Dover Mills
Shelby, North Carolina
Exposition Cotton Mills
Atlanta, Georgia
Fulton Bag & Cotton Mills
Atlanta, Georgia
Greenville Mills
Greenville, North Carolina
Jefferson Mills
Crawford, Georgia
A. D. Juilliard Company
Brookford, North Carolina
Lanett Bleachery & Dye Works
Lanett, Alabama
Limestone Manufacturing Company
Gaffney, South Carolina
Manetta Mills
Monroe, North Carolina
Mandeville Mills
Carrollton, Georgia
Mary Leila Cotton Mills
Greensboro, Georgia
Massapoag Mills
Lincolnton, North Carolina
Minette Mills, Inc.
Grover, North Carolina
Newberry Mills
Newberry, South Carolina
Nuway Spinning Company, Inc.
Cherryville, North Carolina
Osage Manufacturing Company
Bessemer City, North Carolina
Park Yarn Mills
Kings Mountain, North Carolina
Parkdale Mills
Gastonia, North Carolina
Quitman Mills
Quitman, Georgia
Russell Manufacturing Company
Alexander City, Alabama
The Springs Cotton Mills
Lancaster, South Carolina
Textiles, Incorporated
Gastonia, North Carolina
Textron Southern, Inc.
Cordova, Alabama
Trio Manufacturing Company
Forsyth, Georgia
Warwick Mills, Inc.
Boston, Mass.

GRINNELL

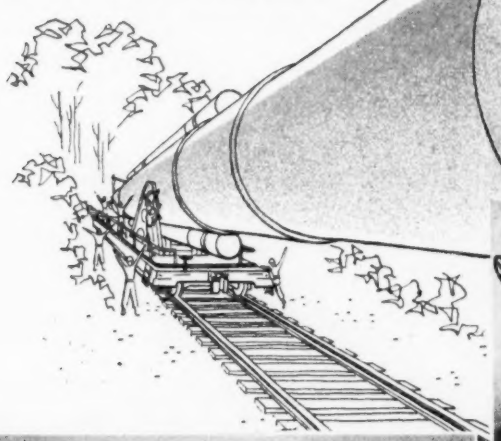
WHENEVER PIPING IS INVOLVED

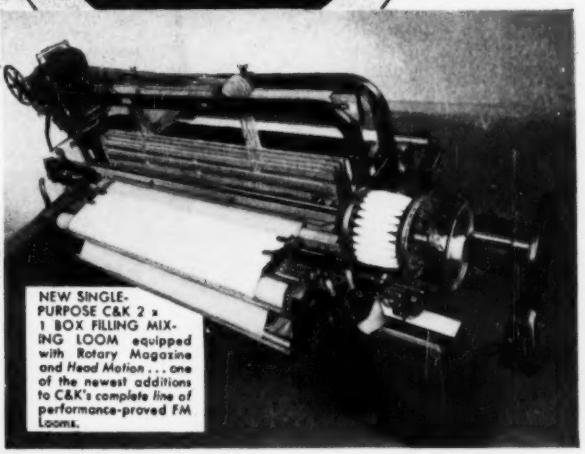
Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

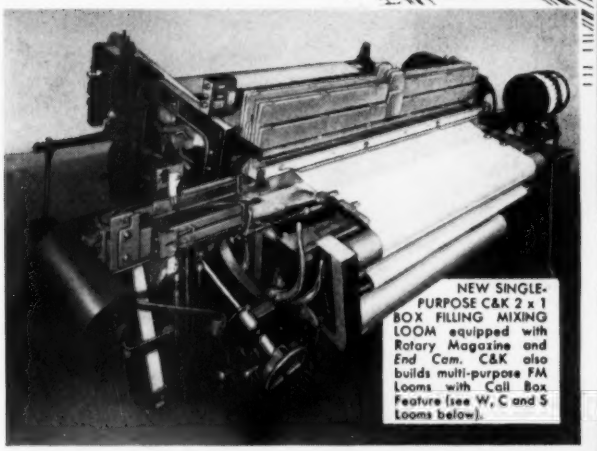
In Any "BATTLE OF FIBRES"

The Big Guns are C&K LOOMS

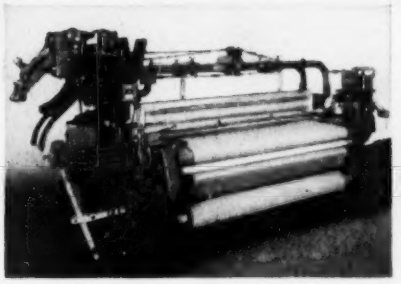




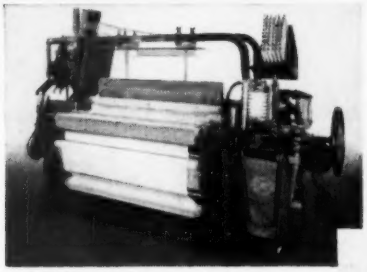
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *Head Motion* . . . one of the newest additions to C&K's *complete line* of performance-proved FM Looms.



NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *End Cam*. C&K also builds multi-purpose FM Looms with Call Box Feature (see W, C and S Looms below).



W LOOMS for unmatched versatility in weaving woolens, worsteds, upholstery and blended fabrics. Made in all widths . . . bobbin-changing . . . *filling mixing* . . . tri-color . . . convertible . . . pick and pick . . . and many other features.

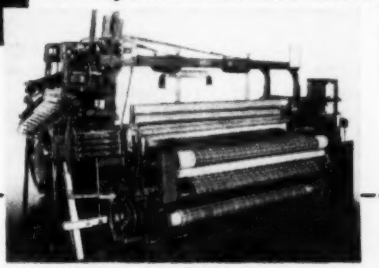


S LOOMS are the most modern machines for weaving nylons, rayons, acetates, combinations and pure silks. Built in all widths . . . call box . . . *filling mixing* . . . bobbin-changing . . . shuttle changing . . . many shuttle sizes . . . pick and pick . . . Jacquard . . . and what other features do you want?

Whatever you weave . . . natural fibres, synthetics, or blends . . . your competitive position tomorrow is being decided by what's in your weaveroom *right now*.

If you have versatile modern looms that can take full advantage of today's new fibres and fabric-constructions . . . looms that can pour out top-quality cloth, and more of it, at lowest cost per yard . . . then your battle is practically as good as won.

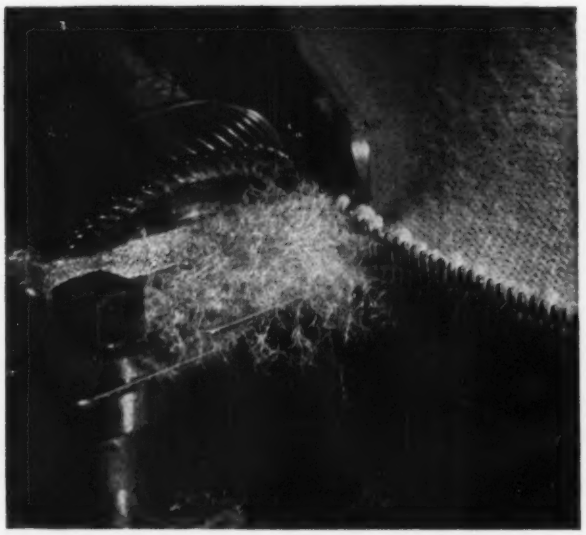
But if your weaveroom shows signs of "battle fatigue" . . . then begin to line up reinforcements *now* . . . from the *World's Longest Line of Looms*. From this line, some of which are shown here, you can build the strongest first line of defense for the profit-position of *your* mill. See C & K today.



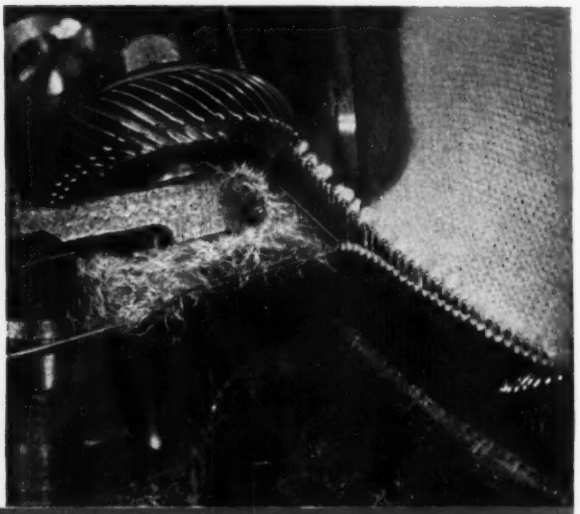
C LOOMS for widest flexibility in weaving cottons, spun rayons and blends for towels, blankets, decorative fabrics, bedspreads, handkerchiefs, shirtings, suitings, dress goods. Built in all widths . . . bobbin-changing . . . shuttle changing . . . . convertible . . . tri-color . . . pick and pick . . . leno motions . . . all-purpose take-up . . . 30" beams . . . and many more C&K-engineered advantages.

Crompton & Knowles
LOOM WORKS
WORCESTER 1, MASSACHUSETTS, U. S. A.
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics



Reduce fly accumulation with AVCODISK® yarn lubricant



PROBLEM: *(top left)*
Non-lubricated yarn accumulates an excessive amount of fly during knitting. Machines need frequent stoppages for cleaning.

SOLUTION: *(bottom left)*
Lubricate yarn with Avcodisk. The Avcodisk slips onto the disk holder of the cone-winding machine.

RESULTS: *(bottom right)*
Here's the same machine when yarn is lubricated with Avcodisk. Fly waste is much less—cleaning time cut up to 50%—machine stoppages drastically reduced.

A synthetic, dispersable wax with superior lubricating qualities, Avcodisk does not clog needles. Avcodisk is easily removed during scouring . . . does not strip on needles and tension guides. High melting and softening points eliminate the need for changing types of disks at different seasons of the year.

Avcodisk is one of the many textile chemical products offered for the textile industry. Write today for samples and complete technical information. Textile Chemicals Division, P. O. Box 455, Marcus Hook, Pa. Textile Chemicals Sales, 1617 Pennsylvania Blvd., Phila., Pa.

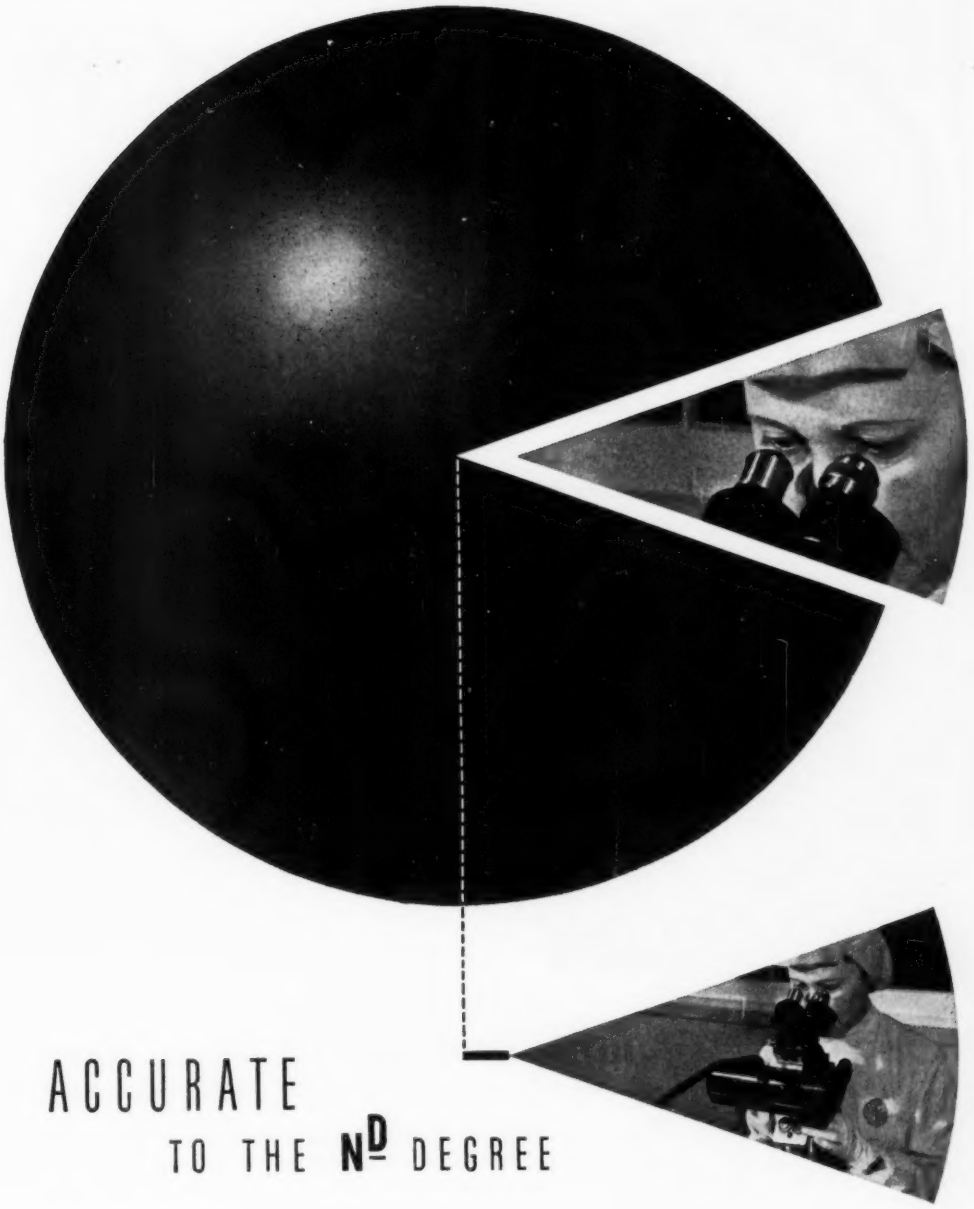
Avcodisk was developed in conjunction with and is manufactured by Atlas Powder Company, Wilmington, Delaware

Avisco®

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

For more information, write direct or use Reader Service post card.



Typical of the careful inspection which New Departure bearing parts must undergo, a raceway is checked by powerful microscope which could reveal the most minute flaw.

ACCURATE TO THE ND DEGREE

Today's textile machines, performing many intricate operations, require accurate, low friction support for their moving parts. Wherever ball bearings are best for this job, the *best ball bearings* are New Departures.

Accuracy is a "must" at New Departure where the diameter and roundness of the balls for many bearings are held within the limits of a few millionths of an inch. To preserve this accuracy, and increase bearing life, New Departure not only originated and developed the sealed-for-life bearing, but also developed an ingenious injection-relubrication method for textile bearings which permits revitalization of bearing grease.

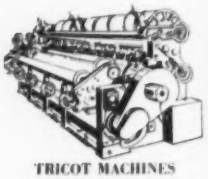
If your application calls for bearings of pre-determined accuracy and life expectancy, install New Departures. Keep your eye on the BALL to be sure of your BEARINGS!

NOTHING ROLLS LIKE A BALL

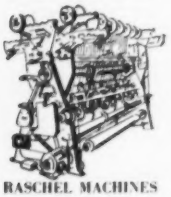
NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Also Makers of the Famous New Departure Coaster Brake

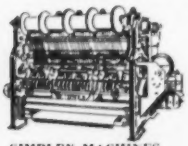
THE REINER LINE:



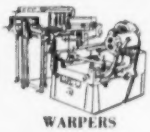
TRICOT MACHINES



RASCHEL MACHINES

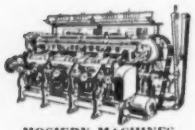


SIMPLEX MACHINES

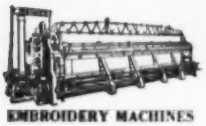


WARPERS

CREELS



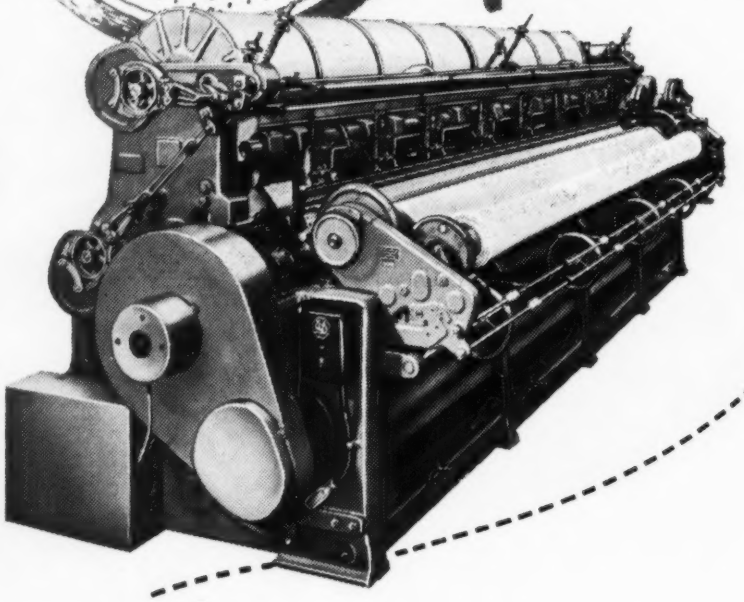
HOSIERY MACHINES



EMBROIDERY MACHINES

Ready spare part service available for all Reiner equipment.

'Round the Clock Production



Quality and speed

are inseparable twins. With this in mind, we have developed our new RT-6 Tricot Machine Model.

This mill-tested unit is an improvement over all previous models. It features automatic beam feed, positive take-up, quick stop and start and fully automatic lubrication. Other advantages include lighter knitting elements, smoother motions for higher speeds, larger cams and cam rollers and smoother guide bar action, in short, sustained top speed production with assurance of highest quality fabrics. This model is of rugged construction; a reliable, trouble-free unit that will produce Tricot at its best in 'round the clock operation. The RT-6 model is available in all standard gauges.

We welcome you to inspect this machine by appointment at our showrooms in Weehawken, N. J.

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

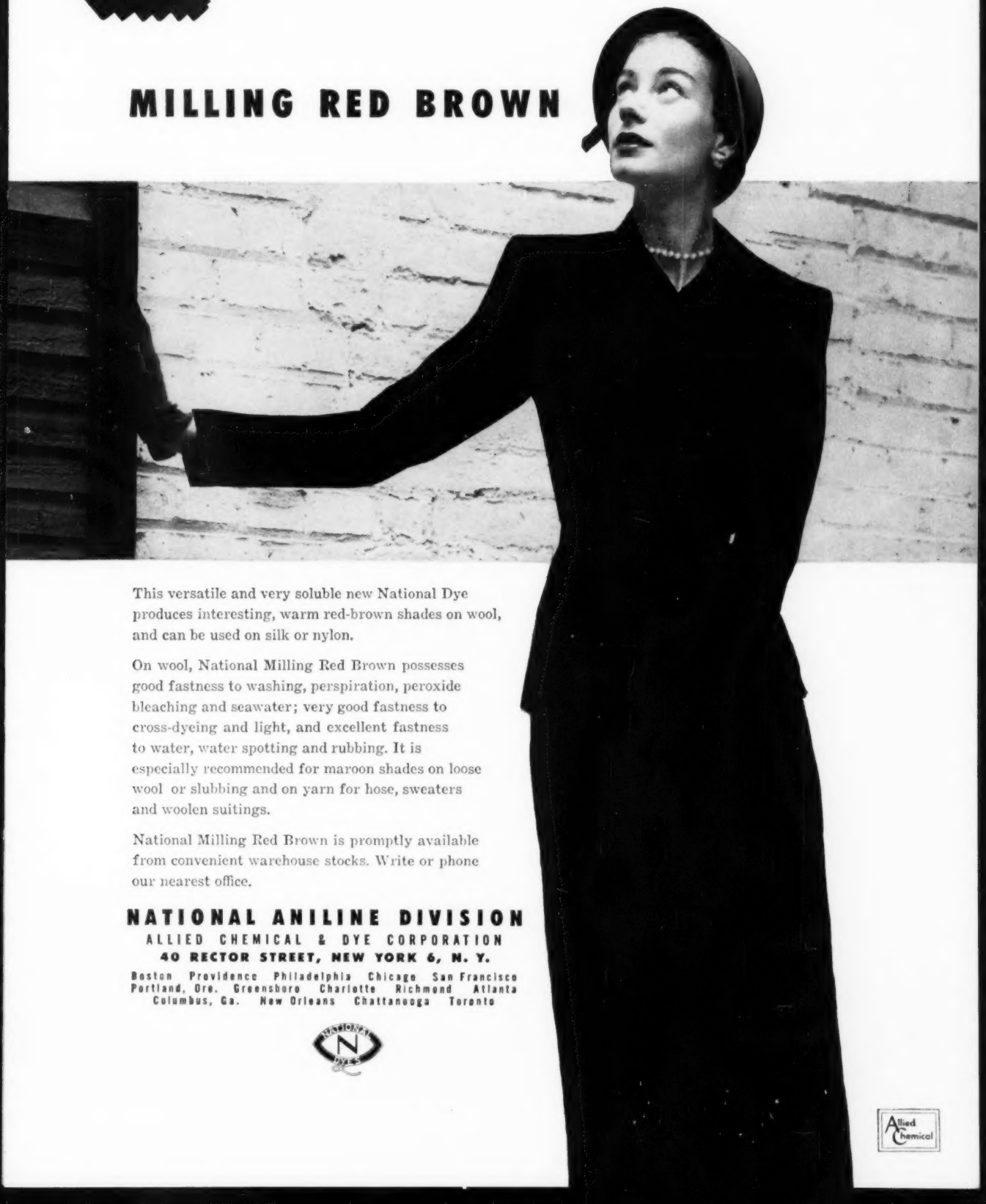
10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

A new National acid dye

MILLING RED BROWN



This versatile and very soluble new National Dye produces interesting, warm red-brown shades on wool, and can be used on silk or nylon.

On wool, National Milling Red Brown possesses good fastness to washing, perspiration, peroxide bleaching and seawater; very good fastness to cross-dyeing and light, and excellent fastness to water, water spotting and rubbing. It is especially recommended for maroon shades on loose wool or slubbing and on yarn for hose, sweaters and woolen suitings.

National Milling Red Brown is promptly available from convenient warehouse stocks. Write or phone our nearest office.

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

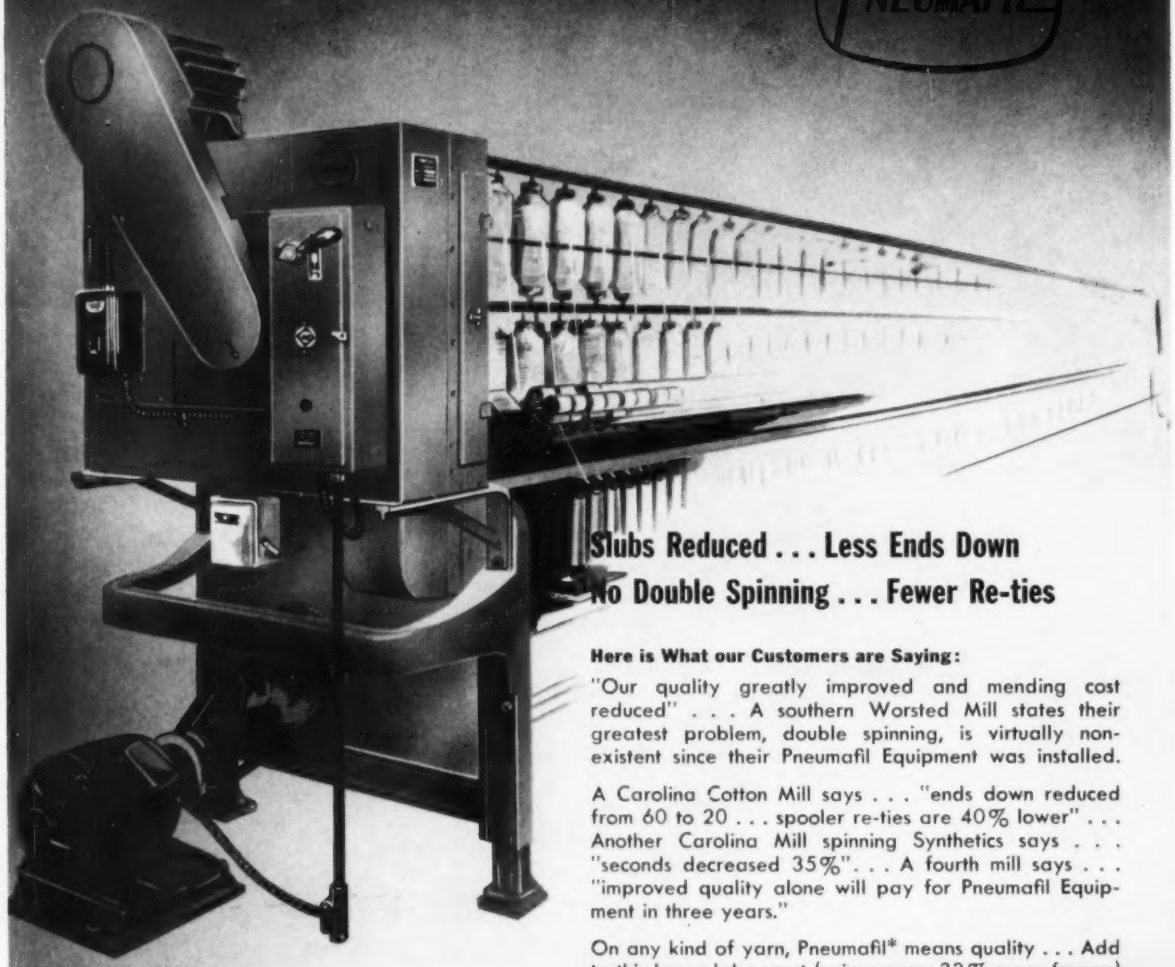
Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Columbus, Ga. New Orleans Chattanooga Toronto

NATIONAL DYES

Allied Chemical

Better Yarn *Means Better Business*

Pneumafil *Means Better Yarn*



Slubs Reduced . . . Less Ends Down
No Double Spinning . . . Fewer Re-ties

Here is What our Customers are Saying:

"Our quality greatly improved and mending cost reduced" . . . A southern Worsted Mill states their greatest problem, double spinning, is virtually non-existent since their Pneumafil Equipment was installed.

A Carolina Cotton Mill says . . . "ends down reduced from 60 to 20 . . . spooler re-ties are 40% lower" . . . Another Carolina Mill spinning Synthetics says . . . "seconds decreased 35%". . . A fourth mill says . . . "improved quality alone will pay for Pneumafil Equipment in three years."

On any kind of yarn, Pneumafil* means quality . . . Add to this lower labor cost (spinners run 33% more frames) . . . increased production . . . savings in waste . . . all of which are being realized every day by Pneumafil* equipped mills, and you can see why . . .

Pneumafil* is the best investment you can make.

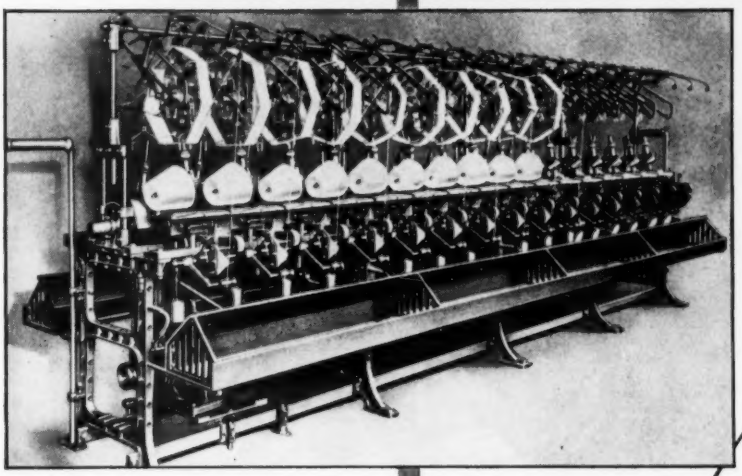
PNEUMAFIL CORPORATION **Charlotte 8, North Carolina**

Sales Offices: Needham Hts., Mass. • Atlanta

*Trade Mark

How to wind BETTER CONES at LOWER COST

The Schweiter KM Skein-to-Cone Winder

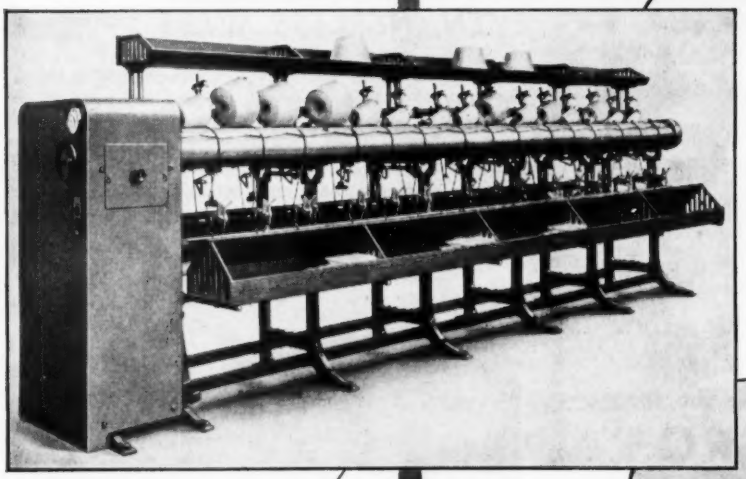


- Winds directly from skeins to cones
- No backwinding necessary
- Uniform wax application
- Eliminates knots and waste
- Better cones at lower cost
- Silent operation

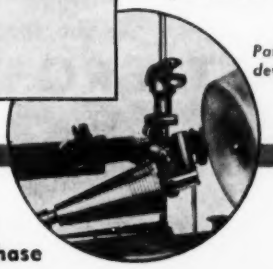
The winder consists of a variable number of units, each individually driven, each winding and waxing in the same operation from either skeins or bobbins.

"A Knotless Yarn is a Premium Yarn."

The Schweiter HKD High-Speed Cone Winder



- Special waxing device for backwinding
- Winding speeds up to 850 yards per minute
- Adjustable diameter for uniform cone size
- Rotating yarn guide device
- Low maintenance cost
- Quiet, efficient operation
- Many other exclusive patented features



Patented cone carrier with locking device and hinged cone holder.

ECONOMICAL
to operate • to purchase

SCHWEITER LTD.

HORGEN (Zurich) SWITZERLAND

Sole Agents for the United States and Canada

AMERICAN SCHWEITER COMPANY • WHITINSVILLE, MASS.

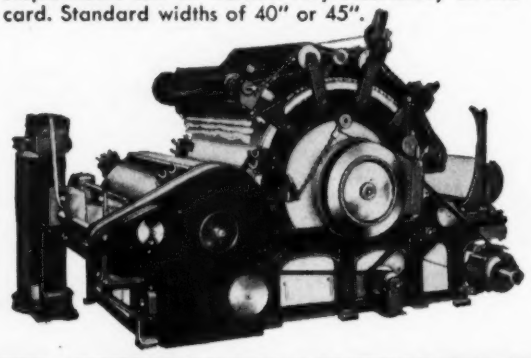
basic

You're in business to make money and *the efficiency of your machinery has a lot to do with profits.* Platt machines are developed in co-operation with the world famous T.M.M. Ltd. spinning research laboratory, built to rigid specifications and **proven in mills throughout the world.** This is the type of machinery that is basic to the successful operation of a cotton mill: highly productive, economical and of long life. Atkinson, Haserick would be glad to show you the proof.

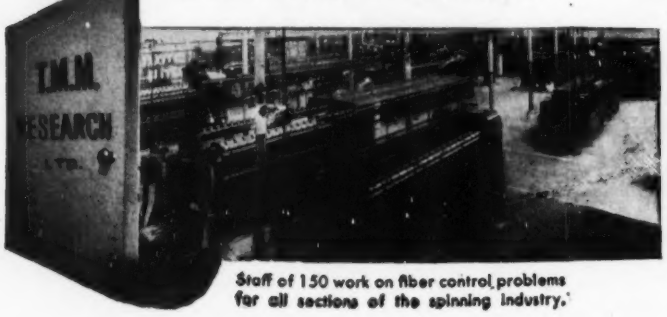
basic TO CARDING

EVEN, NEPLESS WEBS . . . . . .

With Platt's Revolving Flat Card, accurate settings are easy to obtain and hold, insuring the production of an even, nepless web for both light and heavy carding. There is an exceptionally strong cross rail construction and rigid foundation. Vibration is virtually eliminated and air currents minimized. Cut staple fibers can be worked very successfully on this card. Standard widths of 40" or 45".



PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND



Staff of 150 work on fiber control problems for all sections of the spinning industry.

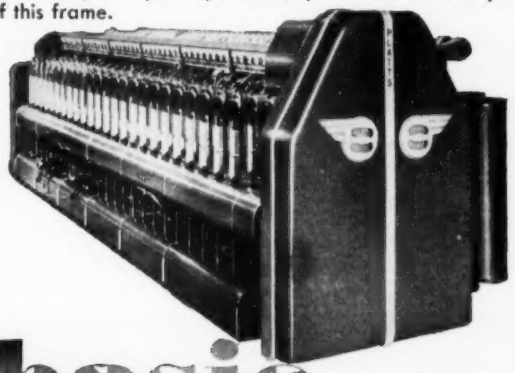
Laboratory provides continual information on all processes from bale to plied yarn.

For more information, write direct or use Reader Service post card.

basic TO ROVING

FIBER AND TWIST CONTROL...

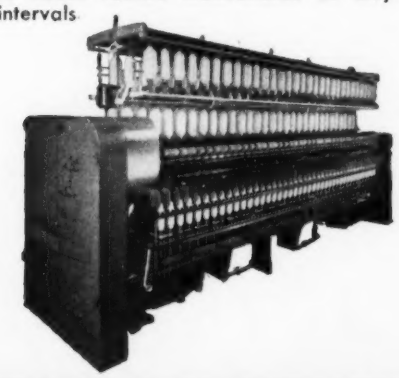
The new Platt M.S.2 High Draft Roving Frame operates with great efficiency at high speeds. Three drafting zones give unprecedented fiber control through a wide range. A stronger roving is formed by inserting more of the total twist close to the nip of the front roll. The firm roving sheds little fly. You will be impressed by the quiet operation, speed and efficiency of this frame.



basic TO SPINNING

LARGE PACKAGES, HIGH SPEED...

The Platt M1 Ring Spinning Frame is a practical, proven frame for large packages. It has a choice of high drafting arrangements and a new spring arm roller weighting that adjusts to a wide range of staple lengths without altering the nip pressure. The simplified headstock has central lubrication, few gears and flexibility of turns per inch. Roller bearing spindle needs routine maintenance at only 2,500 hour intervals



Actual conditions in opening, picking, carding and spinning rooms are reproduced in the laboratory.

a management responsibility

Don't you owe it to your mill to investigate ALL the new processes, new fibers, new machinery. A visit to our Charlotte display rooms would be time well spent. We are engineers and agents for some of the finest machinery developed in England.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

211 CONGRESS STREET
BOSTON 6, MASS.
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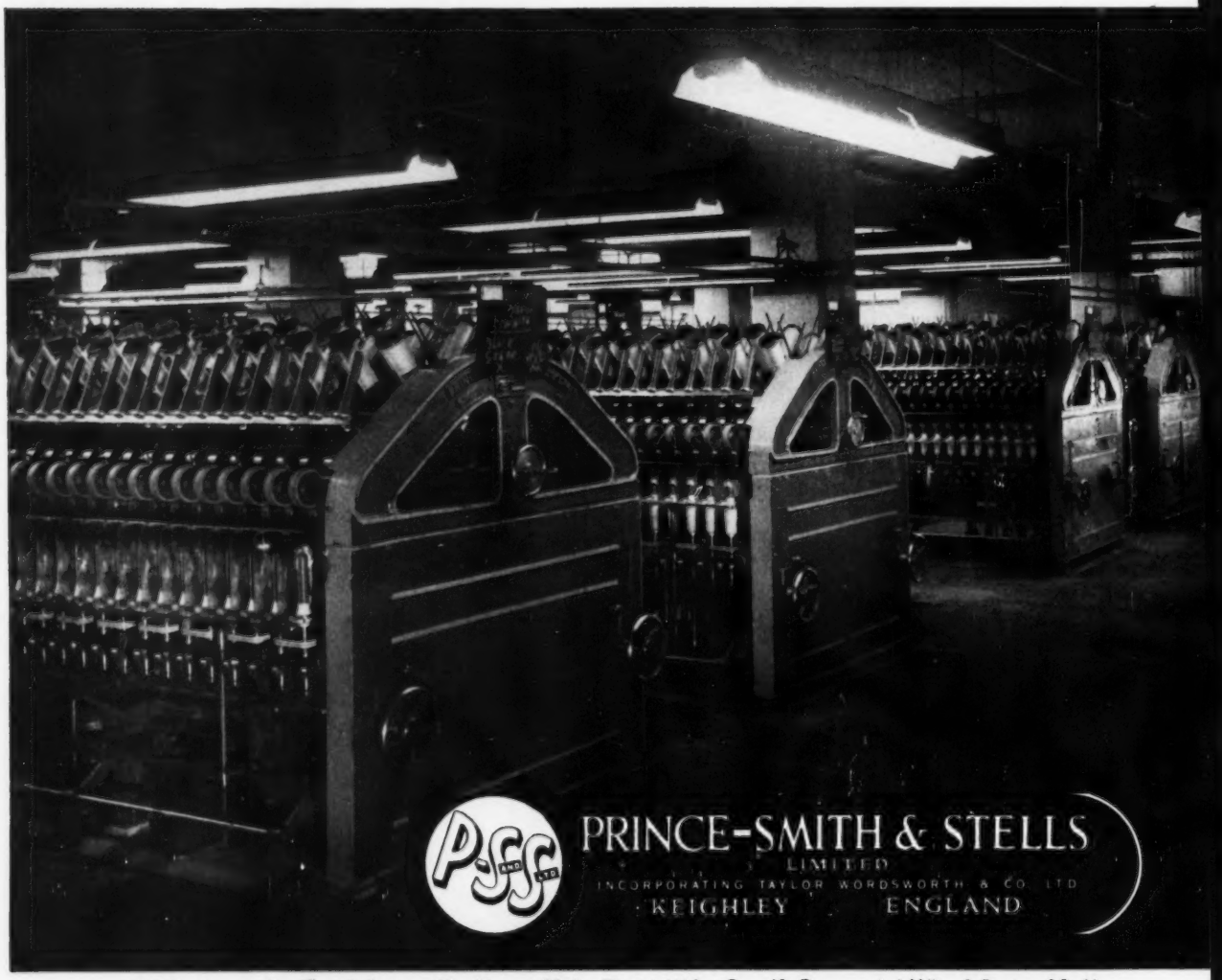
CHARLOTTE 2, N. C.

Large Package High Speed

MAGNUM RING SPINNING FRAME

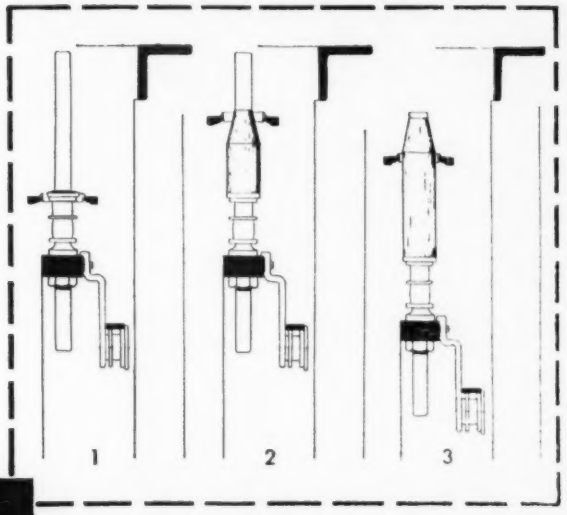
The Magnum Ring Spinning Frame combines the valuable features of a stationary ring rail spinning frame, with the good points of a traversing ring rail type of machine. It eliminates practically all the disadvantages of both, with the result that very large packages may be used with complete success. These packages may go up to 8 ounces and cover counts up to 42's. The greater length on the bobbin allows for fewer doffings, consequently, higher efficiency of the machine and the operatives. Less frequent creeling in later winding operations is a valuable indirect benefit. This is a *tested* and well *proven* spinning frame which has demonstrated its ability in hundreds of mills to produce excellent quality worsted yarn at high speeds. It would be a pleasure to send you data on the capabilities of the Magnum Ring Spinning Frame with reference to the type of yarns you produce.



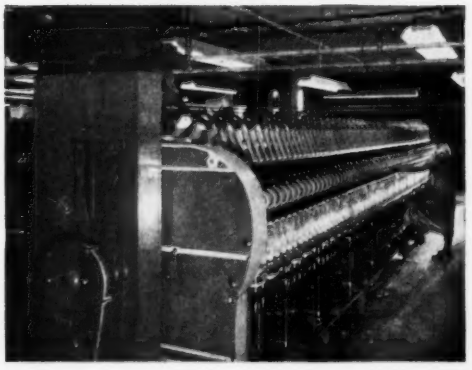
U.S.A. Agents for French System Machinery: Blake Electric Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.

For more information, write direct or use Reader Service post card.

How Magnum action steadies the balloon

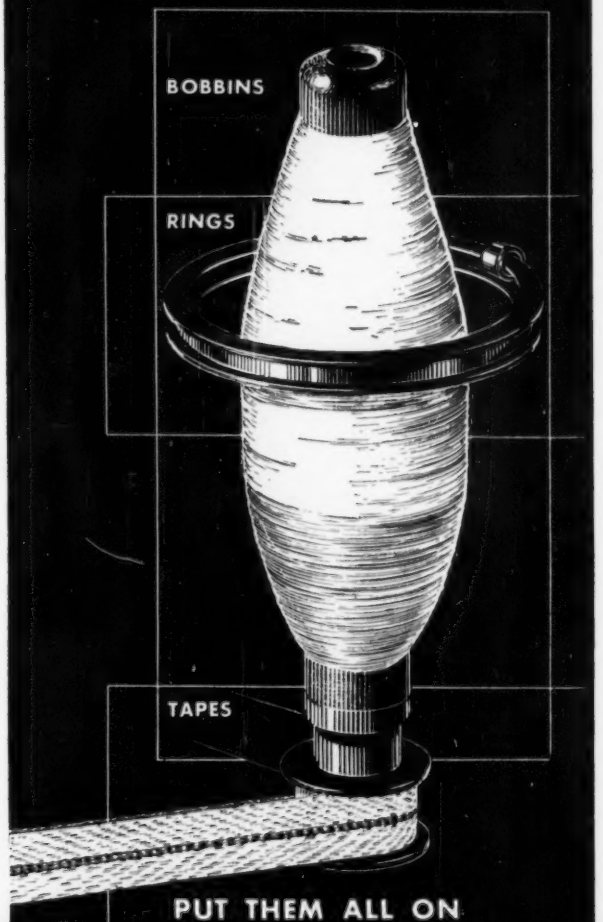


Progressive stages of building the bobbin are shown in the illustration. You will note that the spindle rail is stationary until the bobbin is half filled. At this time it starts to drop in order to compensate for the rise of the ring rail. This dual action maintains a relatively constant balloon. With this control, yarn breakage is quite infrequent, in fact you will find that your yarn will now contain only about a quarter of the knots formerly experienced from standard ring frames.



WE ARE INDEBTED TO
THE CLEVELAND WORSTED MILLS CO.
FOR THE PHOTOS
APPEARING ON THESE PAGES

Get Your
MILL SUPPLIES
the easy way



PUT THEM ALL ON
THE SAME ORDER
To

Atkinson, Haserick & Co.
Textile Machinery Agents and Engineers Since 1823
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1639 W. MOREHEAD STREET
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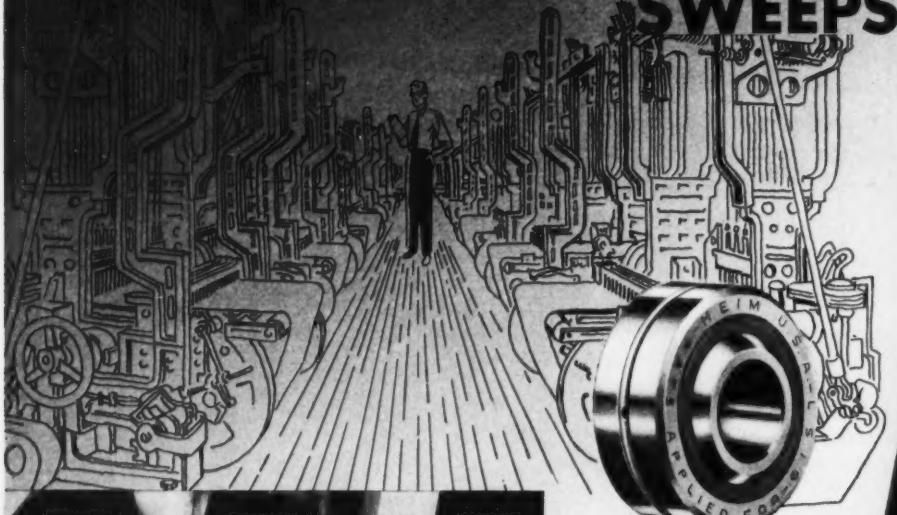
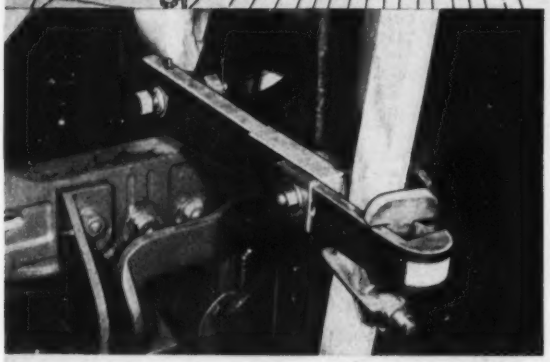
HEIM *Unibal*

SWEEPSTICK





The Heim Unibal Spherical Bearing, which is pressed into a rubber-bonded fabric sweepstick, is the real reason why the Heim Sweepstick delivers such smooth, trouble-free pick action. There is just no possibility for the stud hole to enlarge and cause trouble. The bearing is self-aligning and long wearing.
Put the Heim Sweepstick to work on your looms now and get set for longer, trouble-free operation with no "down time" due to sweepstick failure.

Write for bulletin and prices.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

SERVICE PIN... for you, too

Chances are you've seen this pin. It represents 15 years of service with Socony-Vacuum. Six out of 10 of our industrial engineers and salesmen wear it. Four out of 10 have served over 20 years. In fact, the average length of service of *all* Socony-Vacuum lubrication and process products representatives is almost 17 years! All this petroleum engineering experience, the world's greatest, is yours when you call on Socony-Vacuum. Why accept less for *your* plant?

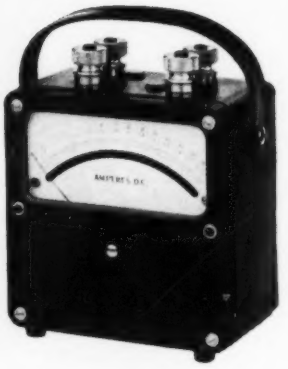
Socony-Vacuum
Correct Lubrication

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates:
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

SPECIALIZED *Instruments*

for TEXTILE PLANT PRODUCTION and MAINTENANCE

These and other WESTON instruments are especially designed to make light work of the regular maintenance routine, and keep equipment functioning at peak efficiency. Order through your local WESTON representative or write . . . WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, N. J.



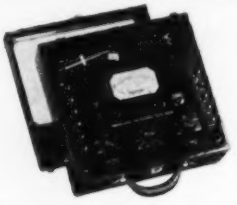
Light Meters—compact Model 703 illustrated widely used for quick measurements in mills and offices—measures all types of lighting direct. Also Model 614 with wide range of light values, and range-changing switch.

Pocket-Size Testers—compact, low cost test instruments available as Ohmmeters — Insulation Testers — Volt-Ohmmeters — and Volt-Ohm-Milliammeters which have well selected group of ranges to cover most electrical servicing needs.

Model 932

LOOM MOTOR AMMETER—has special damping to dampen out heavy surges when checking loom motors. Scale calibrated 1/2/5 amperes. Models also available for all a-c and d-c testing and plant maintenance needs.

Panel and Switchboard Instruments—a complete line of instruments in all types, sizes and ranges required for switchboard and panel needs . . . including d-c, a-c power frequencies and radio frequency, rectifier types and DB meters.

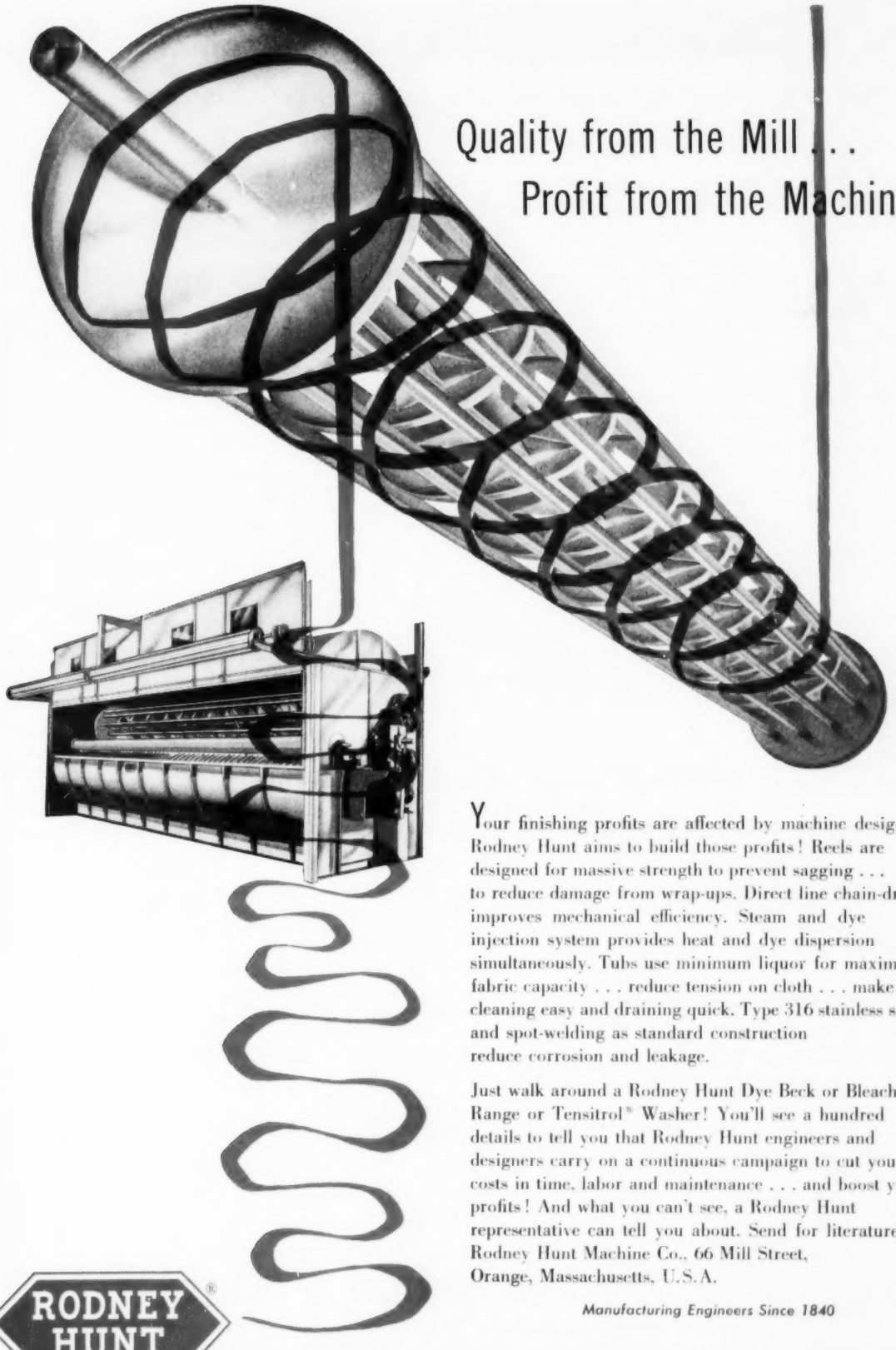


Industrial Circuit Tester—Model 785—a multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; furnished in either oak or steel case.

Clamp Volt Ammeters—(Model 633, Type VA-1) for convenient and rapid measurement of a-c voltage and current without breaking the circuit. Jaws take insulated or non-insulated conductors up to 2" diameter. Safe, rugged, versatile. Also available as a-c clamp ammeter, without voltage ranges.

WESTON All-Metal Thermometers—widely preferred because they maintain their high accuracy despite rugged plant service. Have large, readable scales, from 3½ to 12" long, stem lengths from 2½ to 72". All required ranges from low as −100°F to high as +1000°F.

WESTON *Instruments*



Quality from the Mill . . .
Profit from the Machine!

Your finishing profits are affected by machine design. Rodney Hunt aims to build those profits! Reels are designed for massive strength to prevent sagging . . . to reduce damage from wrap-ups. Direct line chain-drive improves mechanical efficiency. Steam and dye injection system provides heat and dye dispersion simultaneously. Tubs use minimum liquor for maximum fabric capacity . . . reduce tension on cloth . . . make cleaning easy and draining quick. Type 316 stainless steel and spot-welding as standard construction reduce corrosion and leakage.

Just walk around a Rodney Hunt Dye Beck or Bleaching Range or Tensitrol® Washer! You'll see a hundred details to tell you that Rodney Hunt engineers and designers carry on a continuous campaign to cut your costs in time, labor and maintenance . . . and boost your profits! And what you can't see, a Rodney Hunt representative can tell you about. Send for literature. Rodney Hunt Machine Co., 66 Mill Street, Orange, Massachusetts, U.S.A.

Manufacturing Engineers Since 1840

RODNEY HUNT®

TEXTILE MACHINERY DIVISION

If your production or finishing equipment is controlled by mechanical brakes or clutches

YOU'RE WASTING MONEY ON "SECONDS"

Why? Because mills now using machinery equipped with *electric* brakes and clutches are eliminating costly brush, needle and abrasion marks. They're producing a greater quantity of *top-quality textiles!*

How can an *electric* brake or clutch make a big difference in performance? Simply because they're faster, more sensitive, smoother—just what you need to control delicate textile operations better. They permit precise synchronization of machinery and practically instantaneous operation of stop-motion functions.

What specific textile operations have been improved, quality-wise, by their use? There's the Narrow Fabric Loom—Warner Electric Brake has eliminated shade marks formerly caused by coasting stops. Then, there's the Tricot Knitter—here an electronic circuit is used to speed braking, eliminating 9 out of 10 needle marks. Or there's the Brushing Machine—perfectly synchronized braking of eight brush rolls eliminates cloth abrasion. There are numerous other examples, and endless possibilities on practically every textile operation. Your Warner representative will be glad to talk them over with you.

WRITE—New Catalog, No. 6089, gives you complete specifications, operating description and case histories of machines equipped with Warner Electric Clutches and Clutch-Couplings. Free copies available on request.

6 advantages of Warner Electric Brakes and Clutches for original equipment or modernization of old equipment

Lightning-fast stops and starts—Operation is instantaneous. There's no waste motion . . . no clearances to take up . . . no solenoids to delay actuation. Ideal for jogging and inching of machinery. They speed production—simplify set-up.

Never need adjustment—Friction surfaces wear *in*, instead of *out*. Torque remains constant. There are no take-up adjustments—no springs, links, cams, or adjusting screws.

Optional torque and speed—Speed and torque can be accurately calibrated by a simple rheostat control, providing maximum flexibility. Can be precisely synchronized with other machine motions.

Compact and lightweight—Compact "doughnut" design requires less shaft space than any other clutch or brake. Easily adapted to machinery and transmission equipment.

Automatic operation—Electric principle expands use of limit switches, relays, electric eyes, and other automatic control devices. High speed is ideal for rapid cycling.

Eliminate shock—Quick, shockless acceleration and deceleration is accomplished by a "build-up" of torque to maximum value in a period long enough to take all backlash and windup out of gear train, chain or belt drive. Eliminate wear and tear on delicate machine parts—preserve precise adjustments and alignments.

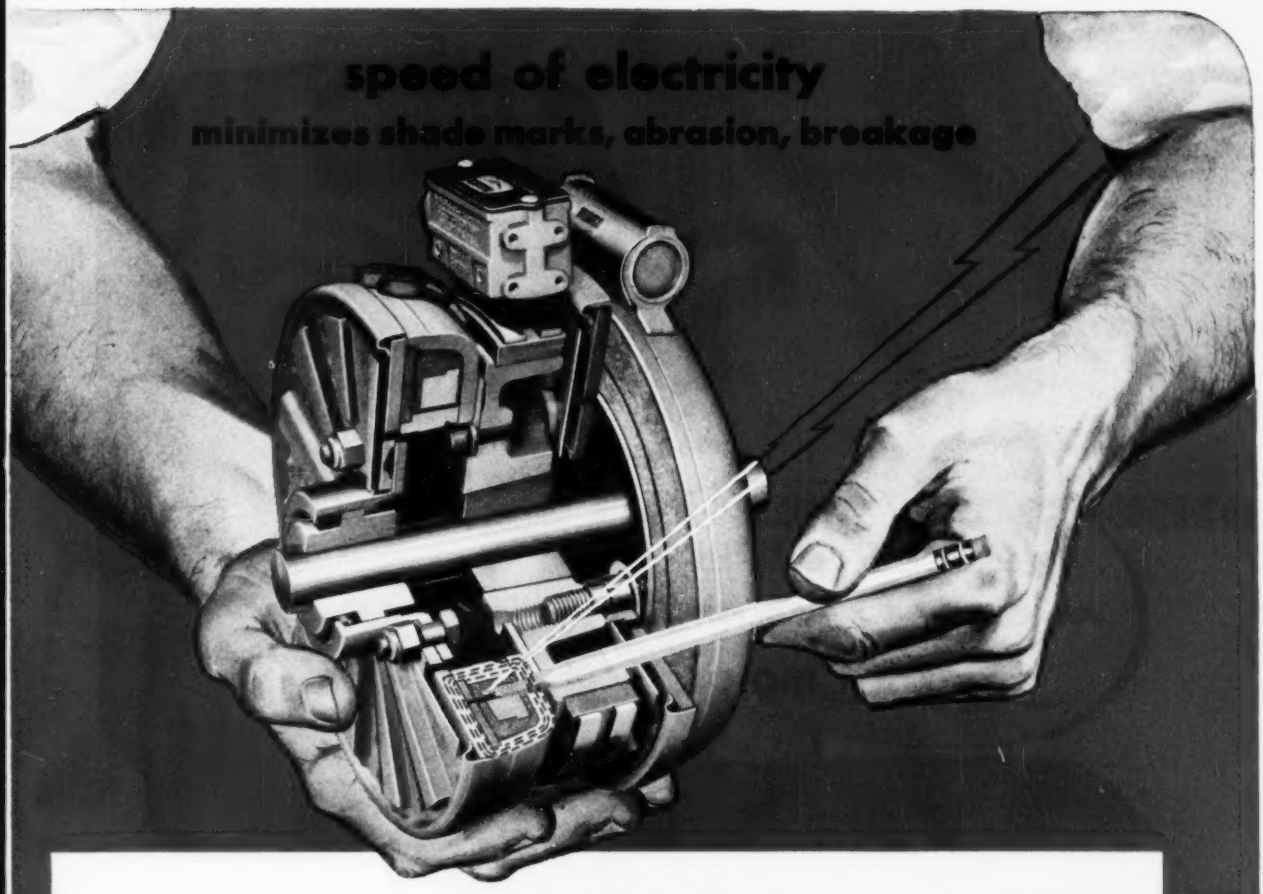
WARNER

ELECTRIC BRAKES & CLUTCHES

FOR INDUSTRIAL APPLICATIONS

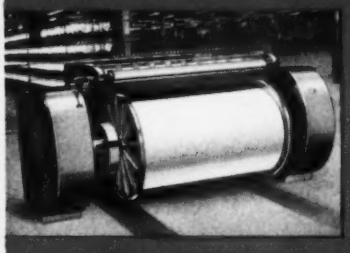
speed of electricity

minimizes shade marks, abrasion, breakage



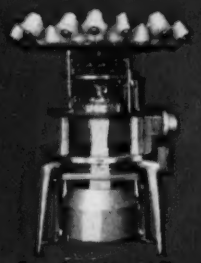
New electro-magnetic principle, ideal for looms, warpers, knitters, finishing machines

Electric Brakes and Clutches represent the newest, most advanced principle of power transmission control. Design and operation are amazingly simple. There are only two main parts—a magnet and armature, each having a friction surface. Fast, positive, electro-magnetic engagement of these surfaces constitutes the "locking" action for braking or clutching. There is no slip or grab. Torque ratings are unusually high for the size and weight of the units. Press a pushbutton . . . or actuate a switch automatically . . . the Warner Electric Brake or Clutch operates with the speed of electricity! Call your Warner Representative to discuss application, sizes, and prices.

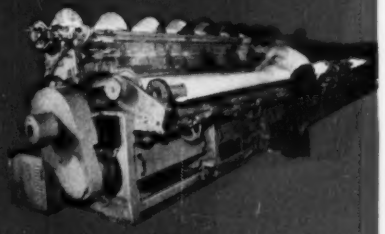


Warner Electric Brake automatically stops Becker High-Speed Warper within 1½ yards. Eliminates lost ends. Permits higher speeds, increases production.

Perfect synchronization of eight Warner Electric Brakes on Herman Brandt Machine eliminates cloth abrasion, increases quality.



Smooth, cushioned Electric Clutch-Brake operation safeguards precision mechanisms and exact synchronization of Reiner Machine.



Over-excitation control circuit permits ultra-high-speed stops and starts of Reiner Tricot—eliminates 8 out of 10 stop marks.

WARNER ELECTRIC BRAKE & CLUTCH CO., BELOIT, WISCONSIN

For more information, write direct or use Reader Service post card.

LINT?

Improve weave room performance with this pair

Lint, dust, dampness will not affect the operation of these two. They're especially designed for weave room operation. Look at the extra features of the loom motor starter—designed in collaboration with leading textile manufacturers and the Associated Factory Mutual Fire Insurance Companies and the only starter approved by A. M. F. I.

Lint and dust are kept out! A special Neoprene gasket forms a positive, continuous seal between the box and cover. Pressure from cover clamp makes sure every crevice is filled with the pliable Neoprene gasket—positive assurance that combustible elements cannot enter the enclosure. Thus, one major cause of weave room fires is eliminated.

The loom motor, too, is totally-enclosed. No chance for lint to clog windings. Notice, too, there are no greasing nipples or cups on the motor. Life-Lines have pre-lubricated bearings . . . need no lubrication. Thus, outages from faulty lubrication are eliminated. There's no dripping grease to mar textiles.

Together, these two cut motor outages and down time—save on maintenance time. Why not get the advantages of this combination? Ask your Westinghouse representative for complete details on Westinghouse motors and controls. Get a copy of the new Loom Motor Starter Booklet, B-5256. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21654-A

YOU CAN BE SURE...IF IT'S

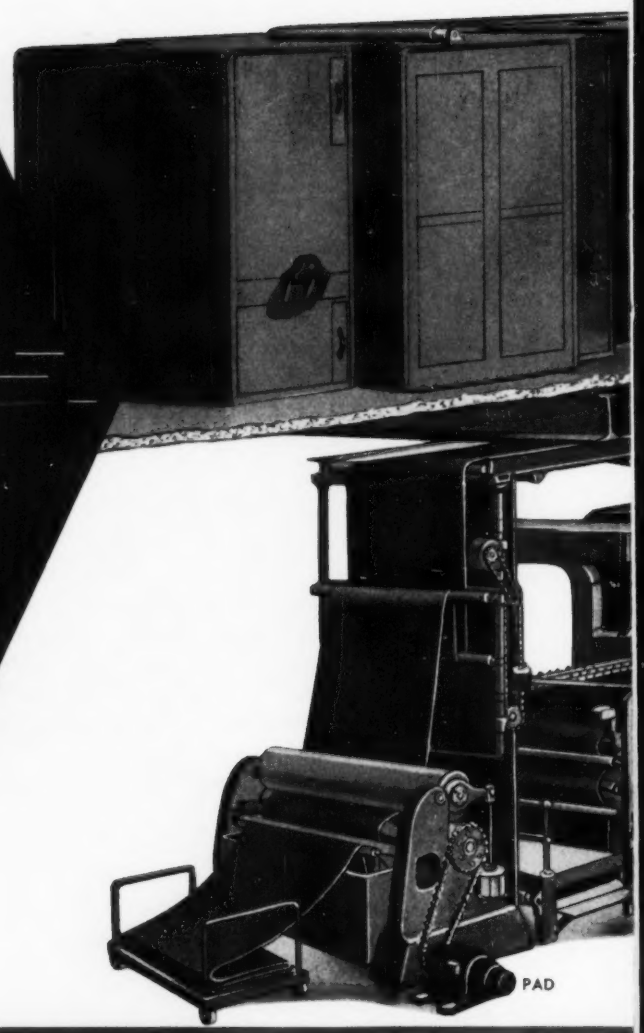
Westinghouse

NEW!

EXCLUSIVE *HUNTER*

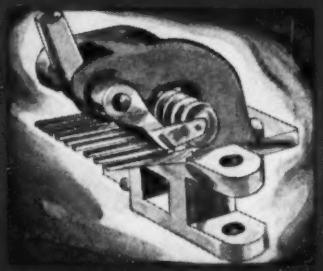
Vapojet

FASTEST, MOST EFFICIENT DRYER EVER MADE!

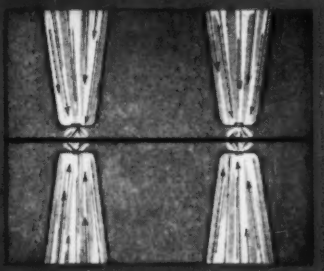


Patented, superheated steam process boosts drying speeds to limits never thought possible . . .

and does a better job!



PATENTED CLIPS ingeniously designed to overfeed as much as 20% on a wide variety of fabrics with gentle firmness and accuracy. Comb-type lower plates also permit uniform drying of the selvedges. The only clip which can be serviced.



SUPERHEATED STEAM vapor jets at a velocity of a mile a minute impinge on cloth simultaneously from above and below. Controlled fabric drying, at vaporization temperature, is most efficient method yet developed . . . unassistable fabric overdrying is eliminated.

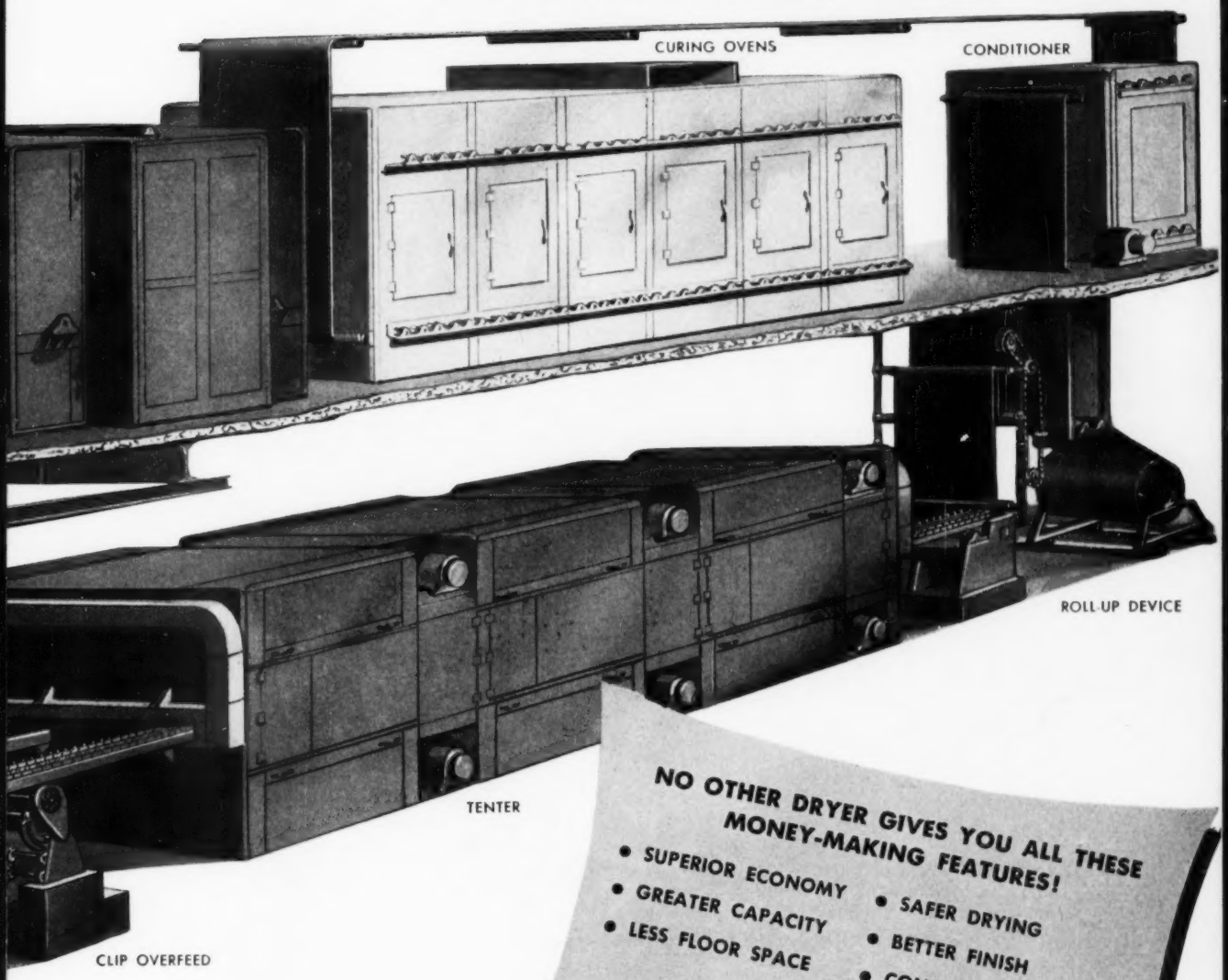
JAMES

EDRYERS

AD

ES

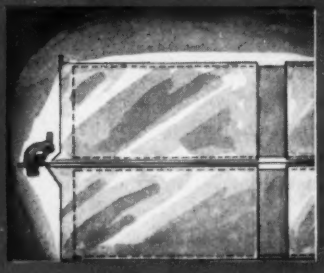
This illustration shows three Vapo Jet Machines (two Predryers and a 3-Section Overfeed Clip Tenter) in a Hunter Continuous Cloth Drying and Resin Curing Range installation at Cliffside Dyeing Corporation, Paterson, New Jersey.



NO OTHER DRYER GIVES YOU ALL THESE MONEY-MAKING FEATURES!

- SUPERIOR ECONOMY
- GREATER CAPACITY
- LESS FLOOR SPACE
- SAFER DRYING
- BETTER FINISH
- CONTROLLED SHRINKAGE

DUNGLER SYSTEM



EXCLUSIVE PATENTED TELESCOPIC NOZZLES make it possible to direct the high velocity jets of vapor evenly over the cloth at exceedingly close range. These nozzles automatically adjust to changes in fabric widths.

TIME AND SPACE. The many special, patented design features of the Vapo Jet make it possible to obtain more efficient evaporation than can be accomplished through any other type of air drying system. This high evaporation capacity saves space, time and money.

BETTER FINISH. Processes all types of fabrics from the most delicate rayon crepes to heavy worsteds without any great or time-consuming adjustments. Controlled drying results in fabric finishes that meet the highest standards for both appearance and hand's.

HUNTER MACHINE CO.

BUILT BY HUNTER ... IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS

NORTH ADAMS, MASSACHUSETTS • FOUNDED 1847

the Old Grey Mare

is better than ~~ain't what~~

she used to be

Thanks to Meadows "Conversions," thousands of long-service spinning and twisting frames... many of them old enough to have been "turned out to pasture"... are running faster and smoother, and turning out more yarn than they did in the yearling days.

A typical Meadows "Conversion" consists of the installation of individual drive pulleys, ball bearing tape tension pulleys, aluminum alloy separators, silent chain drive—and high strength polished and ground steel shafting, mounted on heavy-duty, self-aligning ball bearings.

The result is lower power consumption, even tension at all times, a more uniform speed and twist, fewer ends down, and increased yarn production . . . at far less than the capital investment cost of new frames. Can be quickly and easily installed. Write or call us for estimate and particulars.

MEADOWS CONVERSIONS

MEADOWS MANUFACTURING COMPANY • ATLANTA, GEORGIA

Representatives:

JAMES P. COLEMAN
P.O. Box 1351
Greenville, South Carolina

MATTHEWS EQUIPMENT COMPANY
93-A Broadway
Providence, Rhode Island

SAM HOGG
Atlanta, Georgia

COLEMAN-ROWE, INC.
P.O. Box 782
Salisbury, North Carolina

For more information, write direct or use Reader Service post card.

U. N. World Capitol Building
New York, N. Y.

Quality-Integrity

AHCOVATS*

A selected series of direct and after-treated vat dyes for production of fastest-to-light shades of blacks and greys.

AHCOVAT GREY M

AHCOVAT DIRECT BLACK AC

AHCOVAT BLACK B

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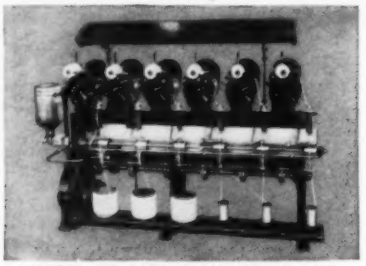
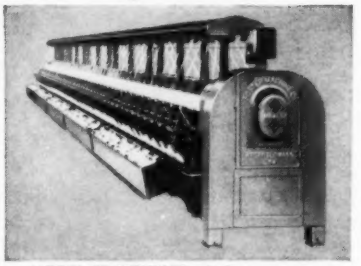
Offices: Charlotte • New York • Teterboro • Providence
Plants: Charlotte, N. C. • Cincinnati, Ohio • Dighton, Mass.

A Winder For Every Textile Purpose

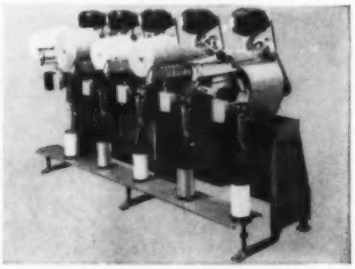
MODEL 102 HIGH SPEED WINDER for all types and counts of staple yarns.



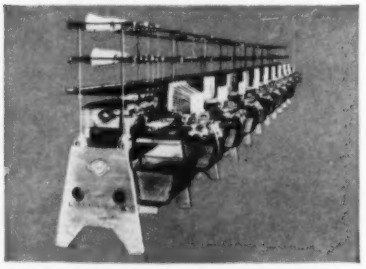
MODEL 75 PRECISE WINDER for all types of filament and cotton thread yarns. Up to 6" traverse.



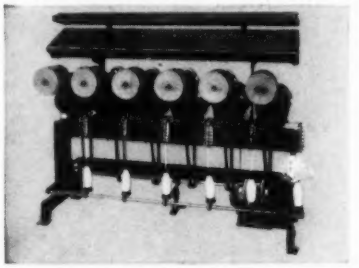
MODEL 57 DOUBLER winds two or more ends parallel — worsted, cotton, staple yarns and combinations.



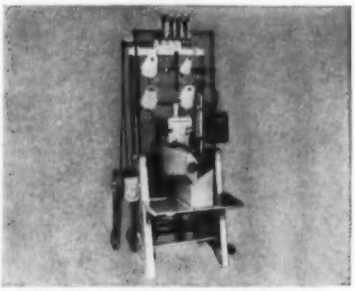
MODEL 78 PRECISE WINDER for tire cord, or coarse cotton or wool yarns. Up to 10" traverse.



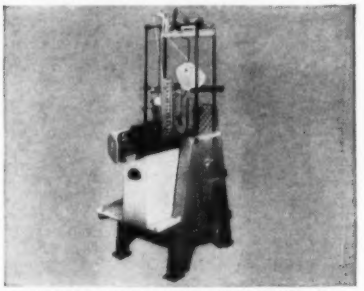
FOSTER-MUSCHAMP AUTOFILL for fully automatic winding of all staple and filament yarns to shuttle bobbins.



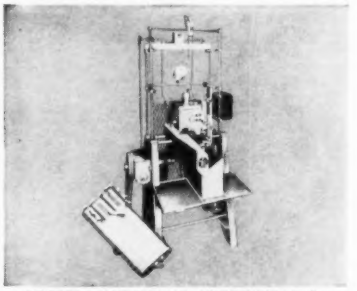
FOSTER MODEL 77 PRECISE WINDER for carpet and other heavy yarns. Traverses up to 8".



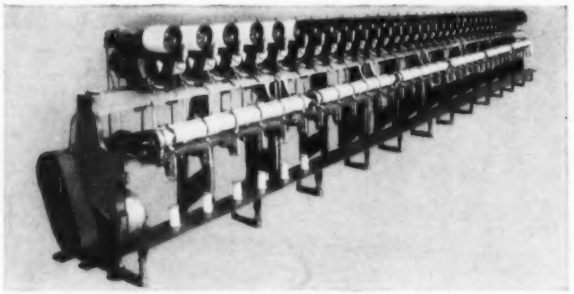
FOSTER-MUSCHAMP AUTOBRAID for fully automatic winding of braider bobbins.



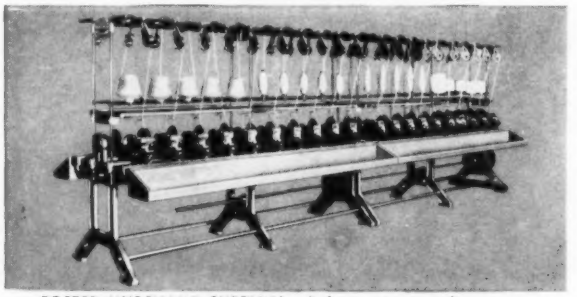
FOSTER-MUSCHAMP AUTOQUILL for fully automatic winding of 1 to 4 ends on stick quills.



FOSTER-MUSCHAMP AUTOTHREAD for fully automatic winding of single end sewing thread to spools.



MODEL 76 NYLON SIZING MACHINE produces barrel wind package on 6" dia. bakelite tube; package assures even drying, easy give-off.



FOSTER MUSCHAMP SUPERFILL winds super cops of cotton, linen, spun rayon and jute — fine and coarse counts — over 500 ft. per minute.

OTHER PRODUCTS: MODEL 56 DOUBLER resembles Model 57, but doubles coarser counts. MODEL 40 winds 30/2 to 8/40 to cones or tubes. MODEL 24 winds tire cord, other coarse count yarn, to open wind cones. MODEL 35A winds coarser yarns to 8" traverse cones. MODEL 12A winds wool, worsted or cotton yarns from skeins to cones or tubes. MAGAZINE CONE WARP CREEL for high speed beaming, ball warping or jack spooling of all types of yarn.

FOSTER MACHINE COMPANY • Westfield, Mass., U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. • *Canadian Representative* (except for Foster-Muschamp equipment): Ross Whitehead & Company Limited, 1475 Mountain Street, Montreal, Quebec • *European Representative* (except for Foster-Muschamp equipment): Muschamp Taylor Limited, Ashton-Under-Lyne, England.

EACH A SPECIALIST IN HIS OWN FIELD : INGOLSTADT SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON. * * * * * * * * * * * * * MAK CARD SETS, SELF-ACTING MULES, RING SPINNING FRAMES. * * Schlafhorst MACHINES FOR WINDING, WARPING AND SECTIONAL WARPING. * Sucker SIZING MACHINES, SIZE MIXING AND COOKING INSTALLATIONS. * B. Thies DYEING-AND BLEACHING PLANTS FOR YARNS AND CARD-SLIVERS OF ALL KIND. * * * * * * Astra WEAVING MACHINES FOR COTTON, WOOL- AND SPECIAL FABRICS e.g. FELT-CLOTHS, JACQUARD-WEAVING MACHINES. * * * * * JOH. KLEINEWEFERS SÖHNE CALENDERS, MANGLES, PRINTING-, MERCERIZING-MACHINES, CONTINUOUS BLEACHING AND DYEING PLANTS. * * * * * * * * MONFORTS FINISHING MACHINERY, MAKING-UP MACHINERY FOR ALL KINDS OF CLOTH. * * * * * * * * * *

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Troublesome lint and textile dust flow right through Century Textile Motors. The motors have specially designed, wide, smooth air passages that allow lint to pass through without clogging. Century Textile Motors are equipped with large fans to assure a strong blast of cooling air over the bearings and around the windings.

Just as Century Textile Motors are specially made for trouble-free, low-maintenance operation, a complete line of general purpose Century motors are available to meet the other needs in your mill.

Century motors are made in sizes from 1/8 to 400 h.p., in a wide variety of types including drip proof, splash proof, totally enclosed and explosion proof. Selective speed drives 1 to 150 horsepower.

Specify Century motors for *all* your needs.

Century C MOTORS

Century 1½ h.p. textile motors give dependable performance, unhampered by the lint from these cotton cards.

CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Mo. • Offices and stock points in Principal Cities

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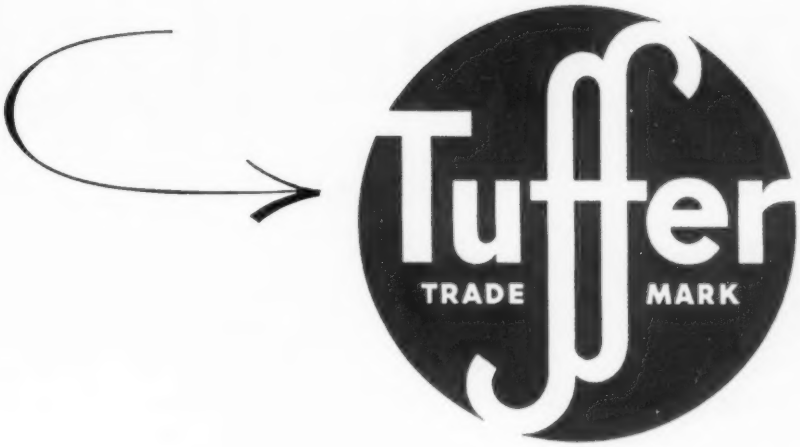
for better service

specify



CARD CLOTHING

By *service* we mean the ability to supply you with the exact type of Card Clothing you need at the *time* and *place* you need it.

This means alertness to your requirements on the part of our representatives and those in our home office. It also means careful supervision of your order through every manufacturing process right to the shipping room door. It means maintaining servicing centers near you to eliminate unnecessary costs and reduce delays.

Above all it means the expression of a healthy appreciation, on our part, for your confidence in sending us your orders.

If you are not now a TUFFER user try us. You will find our *service* is equal to our quality.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

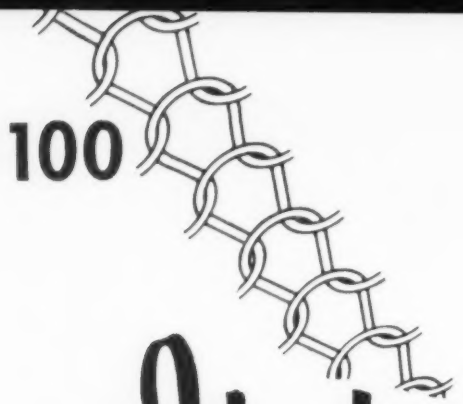
HOWARD BROS.

A-5

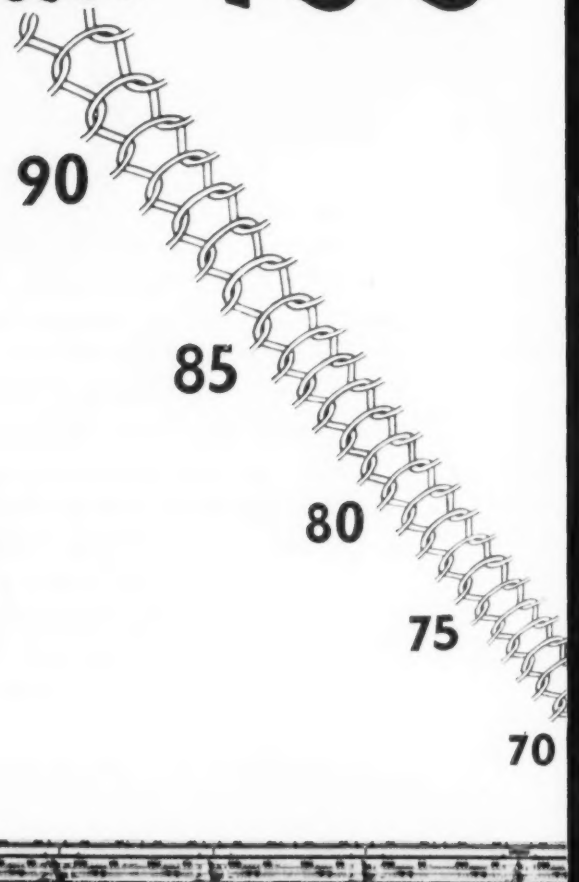
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

Branch: Philadelphia, Pa. *Direct Representation in Canada*

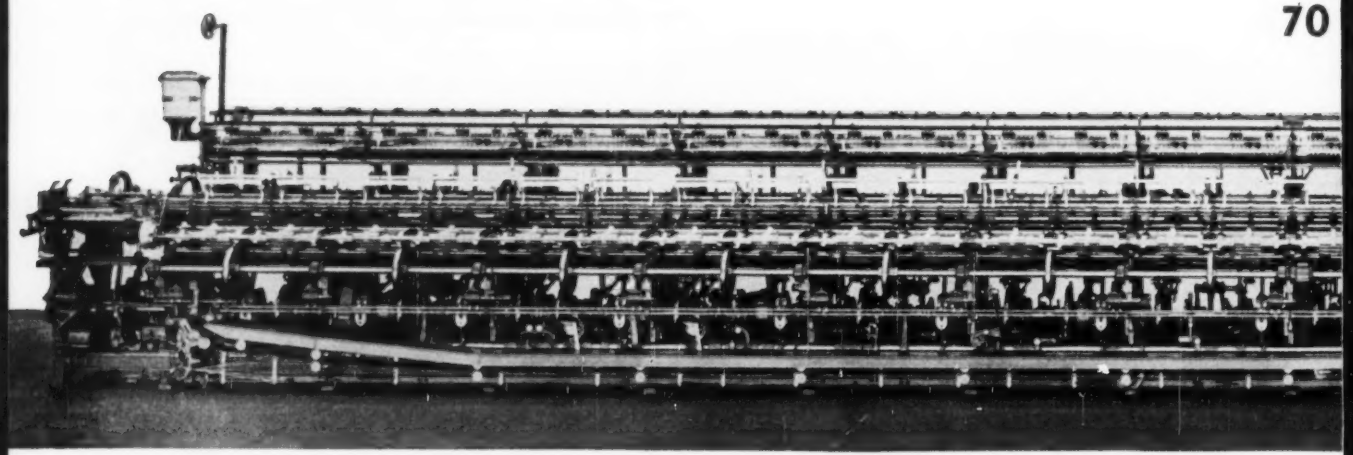


It knits 100



Increased production . . . extra courses per minute . . . extra dozens per day . . . extra profits . . . It's the fastest full-fashioned knitting machine ever built . . .

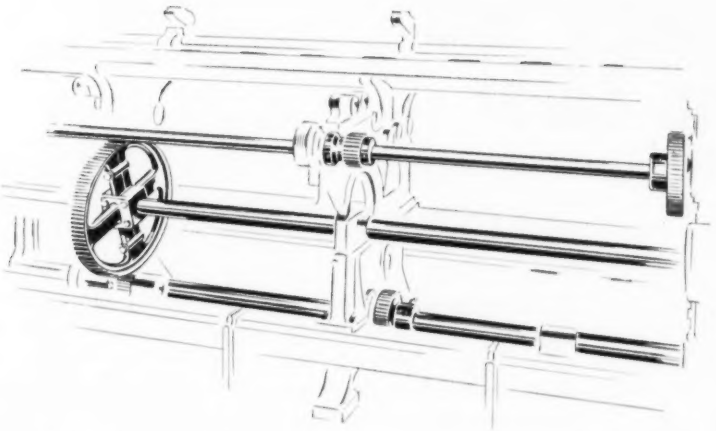
The "READING 100"
Full-Fashioned Knitting Machine



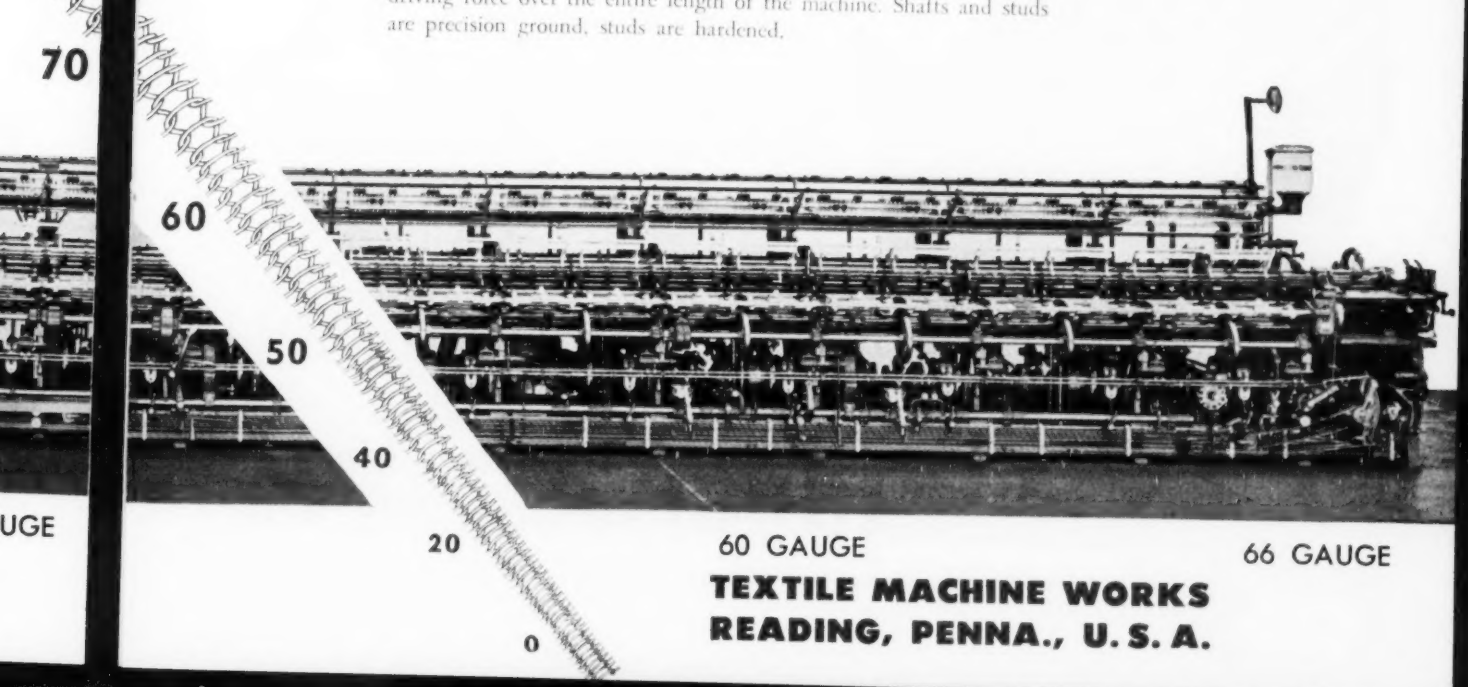
30 SECTIONS

51 GAUGE

courses per minute



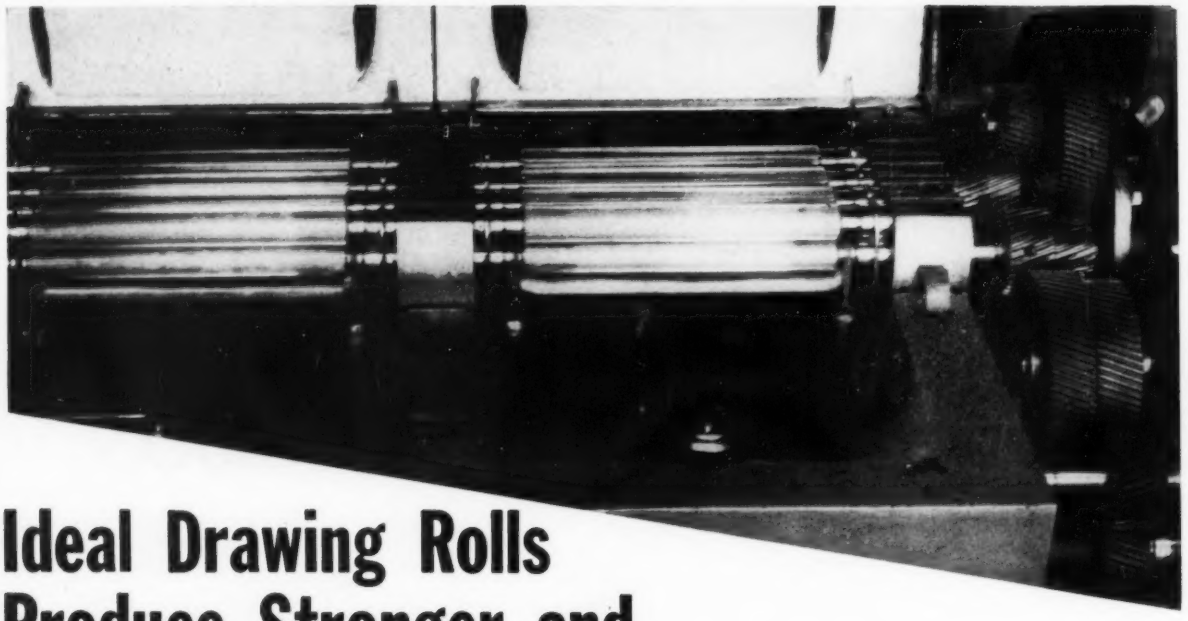
Center Drive with Intermediate Drive Shaft . . . assures minimum torsional stress on drive shaft and camshaft by equally distributing driving force over the entire length of the machine. Shafts and studs are precision ground, studs are hardened.



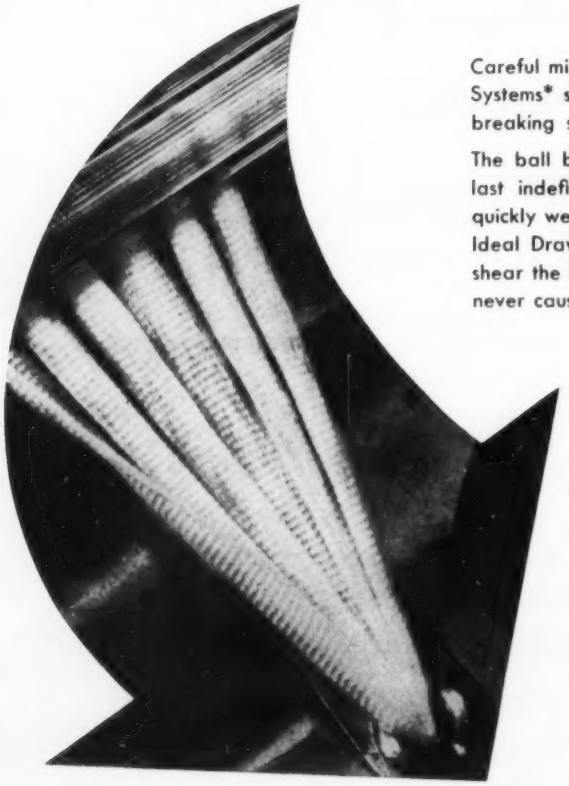
60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.



Ideal Drawing Rolls Produce Stronger and More Uniform Silver



Careful mill tests on hundreds of Ideal High Speed Ball Bearing Drafting Systems* show an average of 26.9% less variation and 7.4% greater breaking strength.

The ball bearings on Ideal Rolls carry all the weight and friction, and last indefinitely—whereas the conventional collars which they replace quickly wear and throw the rolls out of line almost from the start. Because Ideal Drawing Rolls are always perfectly aligned, they never bruise or shear the stock. Because they always remain perfectly synchronized they never cause unequal tension or thick or thin places in the roving.

And note the perfect Crimp

Ideal Fluted Rolls are hardened and ground to give better crimping action. This, combined with higher speeds and longer draft, allows the fibres to go into the trumpet while still warm, thus *permanently* setting the crimp.

Ideal Rolls also produce more per frame, at lower costs. When the revolutionary Evener Motion, which was demonstrated at the Greenville Show, is in production it can be added to this equipment.

Write or wire for full information.

(Unretouched Photograph)

*Patented

Ideal Industries, Inc.
Bessemer City, N. C.

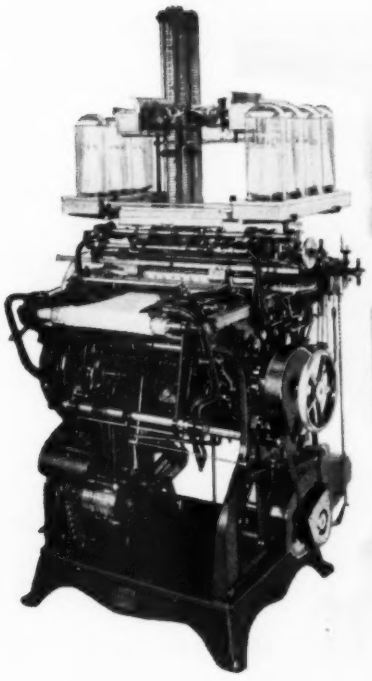
For more information, write direct or use Reader Service post card.

What do these People Buy?

Naturally, hosiery. And when they are selecting the brand they want, they are *open-minded* to the persuasive suggestion of up-to-date suppliers.

SALES and PROFIT WISE, what does this mean to You?

"The hand is quicker than the eye" — but you producers of HOSIERY know that *"eye-stoppers"* can make or break your complete sales effort; merchandise that not only whets the appetite for fine things but stimulates the prospect to become a buyer. Creative imagination is the kick-off point to this end.



TO BE SPECIFIC . . . . . .

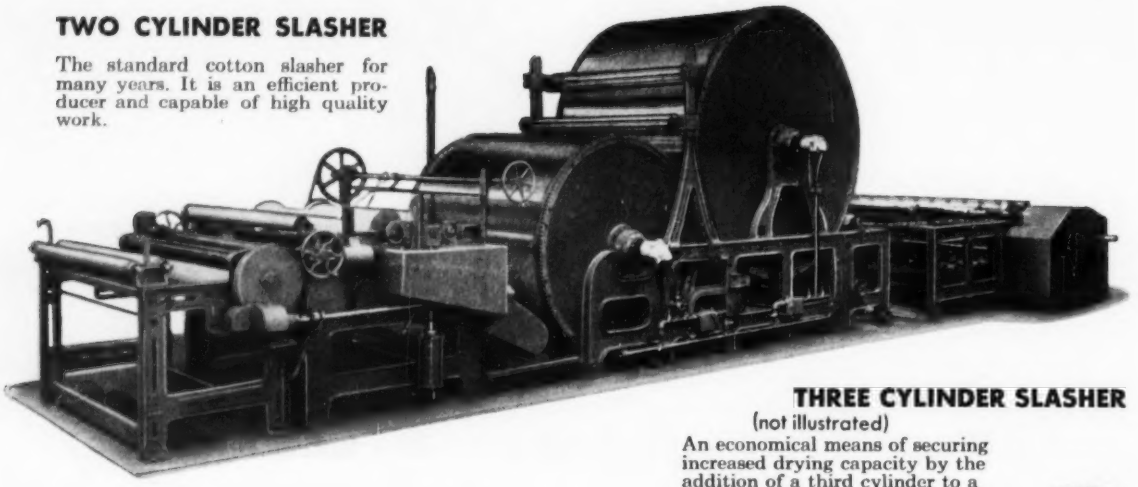
Here's the machine for Hosiery production that will allow your creative imagination full sway. The WILDMAN *new* 72 gauge High Production Full-Fashioned Hosiery Machine is keyed to the needs of the market's style and quality requirements in fine gauge hosiery. Economical . . . efficient . . . automatic in operation . . . high production. Inquire today for complete details.

WILDMAN
Mfg. Co.
NORRISTOWN, PA.

Manufacturers of: Full Fashioned Hosiery Machines; Circular Machines for Outerwear, Underwear, Sportswear, Trimmings; Stop Motions

TWO CYLINDER SLASHER

The standard cotton slasher for many years. It is an efficient producer and capable of high quality work.



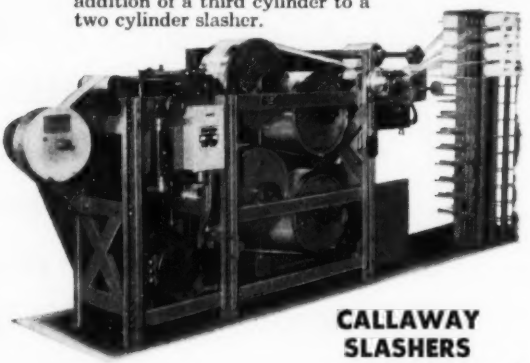
THREE CYLINDER SLASHER

(not illustrated)

An economical means of securing increased drying capacity by the addition of a third cylinder to a two cylinder slasher.

A Slasher To Fit Every Requirement

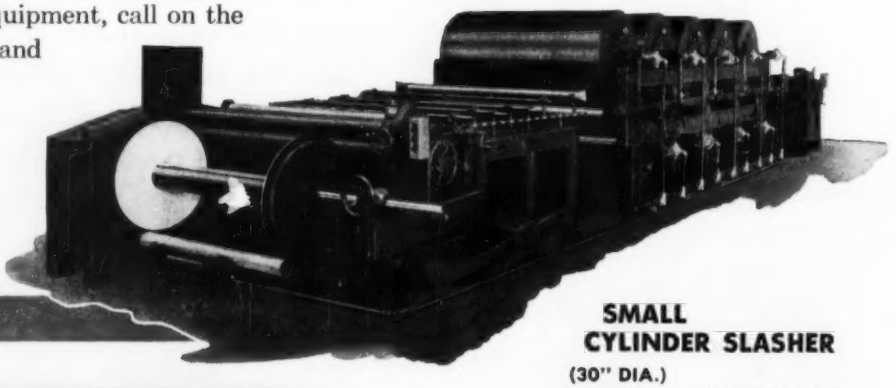
There's a WPF&M slasher for virtually every slasher room requirement . . . sample slashing or full production . . . the lightest gauze or the heaviest sheeting . . . natural fibers or synthetics. Whether you require a complete slasher installation, from size preparation to the finished warp, or modernization of your present equipment, call on the West Point Foundry and Machine Company—specialist in slasher room machinery.



CALLAWAY SLASHERS

Model 50 **Model 51** (illustrated)

Small, narrow-width machines capable of making full width warps for samples, testing, etc., using small amounts of yarn.



SMALL CYLINDER SLASHER

(30" DIA.)

A versatile machine suitable for cut staple and filament yarns. Can also be used for cotton.

WEST POINT FOUNDRY & MACHINE COMPANY

WEST POINT, GEORGIA

WRITE for SPECIFICATIONS

We will be glad to send you additional information on the 3 slasher units featured above and detail on the WPF&M Air-Dri, Cyl-Air, and Hi-Speed Slashers, without obligation.

pick the stainless that fits best

When selecting stainless steel be sure you pick the correct type for your particular application. For some grades resist corrosion better . . . others have superior heat resistant properties. Some are easier to machine . . . still others can be more readily formed or welded.

In every case there is a grade of Crucible REZISTAL Stainless Steel that is best suited to the job. And to help our customers select the type that will provide the best service for the lowest cost, we make available all the design, metallurgical, fabricating and application data we have accumulated in our years of stainless steel experience with many different industries.

Our staff of field representatives brings you the benefit of our vast technical resources. And the quality of REZISTAL Stainless Steel sheets, strip, plates, bars, wire, forgings, castings and tubing produced in our modern integrated mills is unsurpassed in the industry. When you have an application for stainless, call Crucible.

CRUCIBLE first name in special purpose steels

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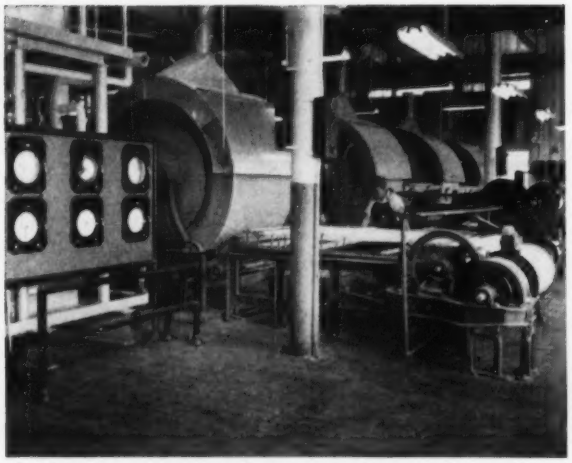
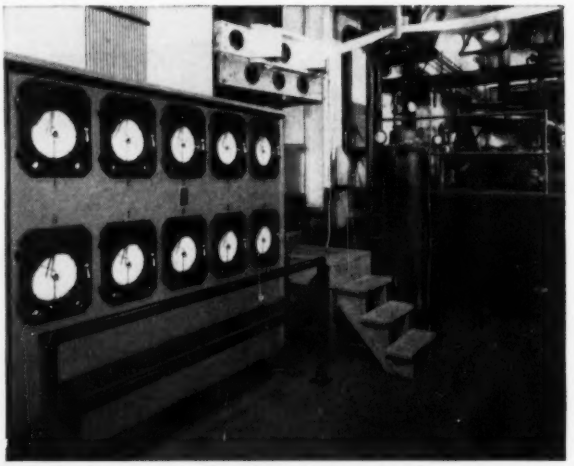
CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS



Taylor instruments controlling size cooking period, controlling and recording temperature of storage kettles.



Taylor instruments controlling and recording bring-up period and boiling period, also recording pressure inside kiers.

"Better Slashing, Bleaching, Jig Dyeing at lower cost!"

SAYS LARGE SOUTHERN TEXTILE MILL OF NEW TAYLOR CONTROL

RECENTLY this mill installed Taylor Automatic Control on slashers, bleachers, dye-jigs and size cooking kettles (not pictured), with the complete co-operation of Taylor Field Engineers.

TYPICAL REPORTS: *"Slasher operation much improved. Exact size box level—and temperatures for size boxes and drying cylinders being maintained."*

"Big steam savings on jig dyeing—with more uniform quality."

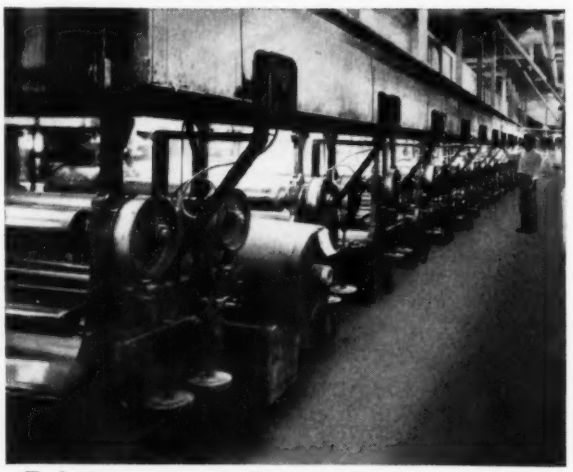
"Perfect bleaching."

"Size cooking operation controlled automatically without a hitch."

We're doing similar jobs for hundreds of customers, because we know their problems and carefully tailor our instrumentation to their specific needs. Because Taylor grew up with the Textile Industry, we can supply instruments that will keep quality up and rejects down on just about any job in your mill: *size cooking, size storage kettle, slashing, kier bleaching, continuous bleaching, tentering, piece dyeing, package dyeing, beam dyeing, finishing, mercerizing, skein dyeing, top dyeing* and a dozen others.

Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.



Taylor instruments controlling and indicating temperature in open dye-jigs.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

30 years experience

COTTON

COMBED WOOL

roller
bearing
spindles
novibra
spheric

CARDED WOOL
AND COTTON WASTE

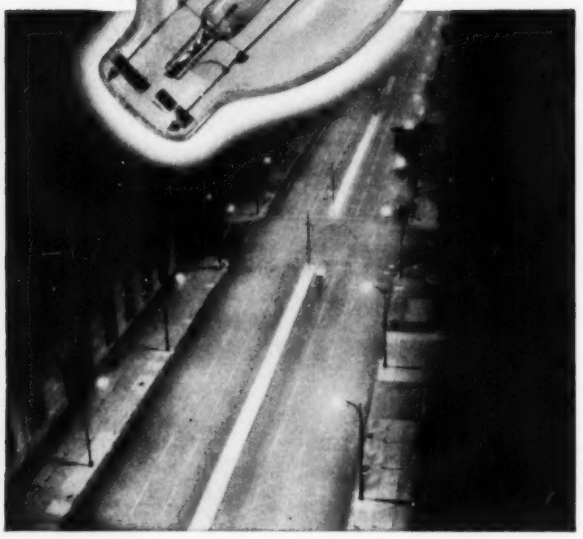
MACHINES
for
PREPARING,
SPINNING and
TWISTING of
COTTON,
COMBED WOOL,
CARDED WOOL and
COTTON WASTE

Carniti

Textile machines

A. Carniti & C. • Officine Fonderie Meccaniche Tessili Oggionesi S. p. A. - Oggiono (Como) Italia

Westinghouse Mercury Lamps Are 8 to 10 Times Brighter Than Incandescents– Use No More Power



BEFORE changing to Westinghouse Mercury lamps, Richmond, Virginia's Broad Street was lighted with regular incandescents. Lamp poles were 14 feet high and placed 110 feet apart. This resulted in areas of semi-darkness between fixtures, and glare, so common to many streets.

AFTER changing to Westinghouse Mercury lamps, Broad Street is 8 to 10 times brighter, and uses no more power. Lamp poles are 32 feet high and placed 85 feet apart —there is now less glare, and no areas of semi-darkness anywhere on the street.

Streets, highways, factories, terminal buildings, parking lots, or railroad yards can all be lit more efficiently and for less money with Westinghouse Mercury and Fluorescent-Mercury lamps. They produce more light per watt than incandescents, and have a rated average life of 5000 to 6000 hours—directly reducing your lighting costs. And longer-lasting Mercury lamps cut your maintenance costs to the bone.

WHERE YOU WANT WHITE LIGHT, you can use the new Westinghouse Fluorescent-Mercury lamps. They produce white light with regular Mercury lamp economy and eliminate the need for color-correcting incandescents. *The newest size Westinghouse 1000-watt Fluorescent-Mercury lamp is the cheapest source of mass white light in the world.*

The multiple advantages of Westinghouse Mercury lamps are described in a 24-page booklet. To get your copy without cost or obligation, please write to: Westinghouse Lamp Division, Dept. TW-6, Bloomfield, N. J.

YOU CAN BE SURE...IF IT'S Westinghouse

TORRINGTON'S COMPLETE NEEDLE SERVICE...

assures maximum versatility in Raschel knitting

The great diversity of raschel fabrics in increasing demand in many different markets makes Torrington service a valuable production asset to the raschel knitter. For Torrington is a dependable source for highest quality raschel needles . . . precision-leaded or unmounted . . . in any style, size and quantity. Longer needle life, more efficient machine operation and superior knitting quality are all *bonus* features of Torrington needles. To profit fully from the remarkable versatility of your raschel machines, specify Torrington for all your needle requirements. Write or 'phone our nearest office for complete information.

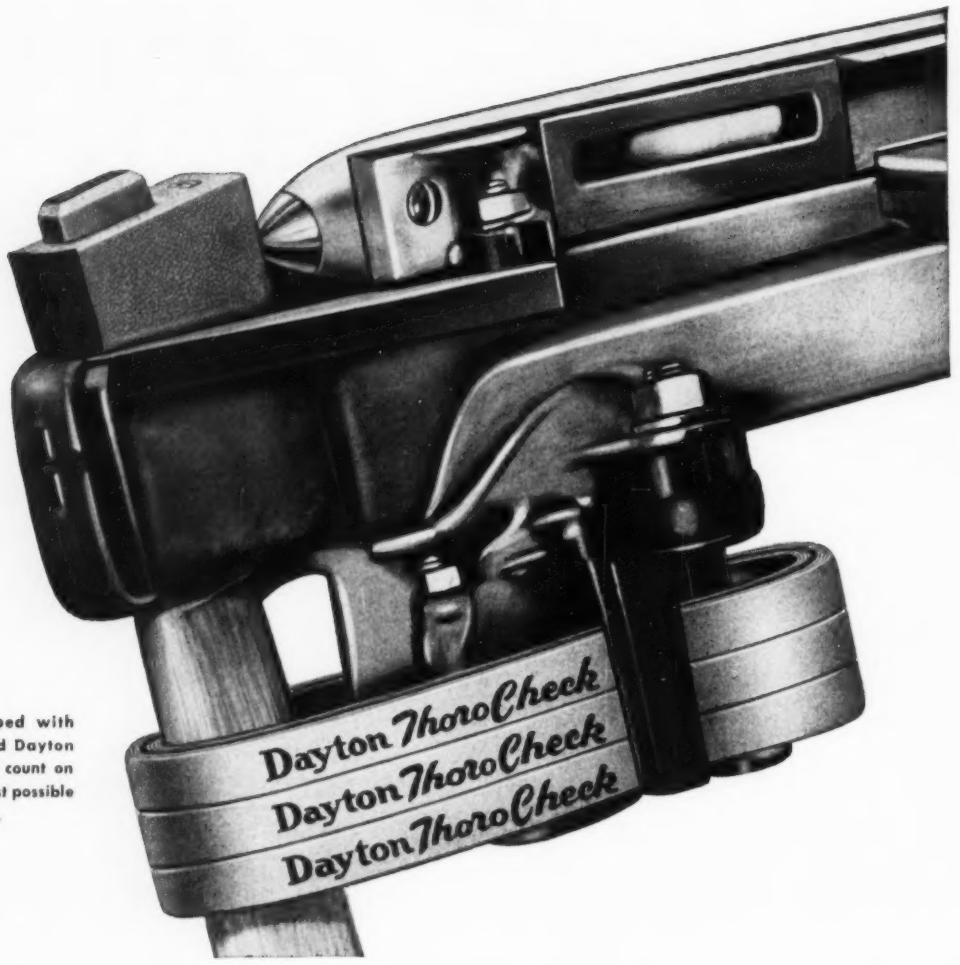
THE TORRINGTON COMPANY
Torrington, Conn., U.S.A.
Established 1866

SPRING BEARD · LATCH · LEADED AND PARTS

TORRINGTON NEEDLES

Branches: New York · Philadelphia · Chicago · Boston · Greensboro, N. C. • St. Louis • Bedford, P.Q.—Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 W. Vernon Ave., Los Angeles 37, Calif. • Broadgate House, 7-10 Eldon St., London E. C. 2, England

Many mills realize 25% New Endless



When looms are equipped with Dayton Thoro-Checks and Dayton Thorobred Pickers, you can count on efficient service at the lowest possible check strap and picker costs.

Alert, cost-conscious textile mills everywhere are adopting Dayton Thoro-Checks as standard equipment on their looms. Such action follows the results of many test installations, proving the amazing ability of Dayton Thoro-Checks to reduce check strap costs.

Actual installations show that this Dayton endless check strap outlasts other types by 25 to 50%, and in some instances, even more. For example, a large southern mill installed them on X-2 looms. Since then they have seen 5-day week, round the clock operation for over 10 months. And they're still in service. Old type straps lasted only two or three months on these very same looms. But that's not all . . . besides longer check strap life, the mill also realized considerable saving in maintenance labor since almost no adjustment of the straps was necessary.

There are definite reasons for such outstanding performance. Smoother checking by means of a snubbing action stops the stick with less impact on each individual strap, thus lengthening strap life. Also, an endless strap eliminates the drag over the stick of open end types—another step toward longer strap life.

You enjoy important maintenance savings, too, when you equip with Dayton Thoro-Checks. Once the straps are properly installed, there is almost complete freedom from adjustment, even on Monday morning starts. That's because the rubberized fabric construction is unaffected by temperature or humidity and doesn't "grow," even under the terrific pounding of high-speed looms.

to 50% Savings with Check Straps

There's an important safety factor with Daytons, too, both from the standpoint of damage and from lost production. In the event of breakage after long service, generally only one strap will break at a time, thus providing a safety factor not possible with one-piece straps. They may be replaced individually or in multiples.

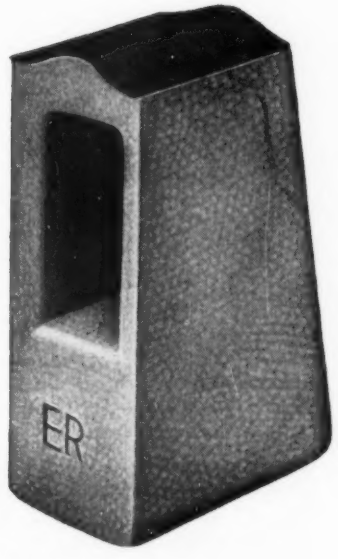
If your looms are not yet equipped with Dayton Thoro-Checks, it will pay you to try them. We believe you, too, will find that they pay for themselves many times over.

Dayton Thoro-Checks are made in a wide variety of sizes to fit practically all makes of looms. Get complete details, or better yet, order your Thoro-Checks today from your Dayton Textile Jobber or write: Dayton Rubber Co., Woodside Building, Greenville, S. C.

Here's why Dayton Thoro-Checks are so economical

- Outlast other straps by 25% to 50%
- Smooth checking
- Little or no adjustment
- No elongation
- Unaffected by temperature or humidity
- Individual or multiple replacement
- Protect binder and picker stick
- Give greater picker and shuttle life

Save on Picker Costs, too, with Dayton Thorobred Loop Pickers



Dayton Thorobred Pickers are built strong to take the pounding of high-speed shuttles for long periods. In fact, they often last twice as long as ordinary pickers.

Because of the slight tilt with which the picker has been designed to fit the stick, there is always perfect shuttle contact. As a result, Dayton Thorobred Pickers keep their shape, stay put on the stick, and practically eliminate jerked-in fillings. Also, Dayton's front edges are rounded to eliminate hanging filling, while its narrow back permits free non-wear on the lay-in strap.

These are only a few reasons why so many mills prefer Dayton Thorobred Pickers. For complete details get in touch immediately with your mill supply jobber or write direct to Dayton Rubber.

Dayton Rubber
Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

Dayton Rubber Company, Textile Division
Woodside Bldg., Greenville, S. C.

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 For more information, write direct or use Reader Service post card.

...with TYCOL lubricants on hand!

Cleaner because they cling! Tycol Amortac oils are tailored for mill operations with a special additive to impart positive "non-drip" characteristics. They'll lubricate looms, also top rolls on spinning, drawing and roving frames... with no "throw off", no staining of finished threads! The Amortac series is just tacky enough to penetrate and cling to bearings – without splash – at peak roll speeds. With an added bonus: they'll minimize corrosion even in the most humid atmosphere! Request full information from your local Tide Water Associated office – today!

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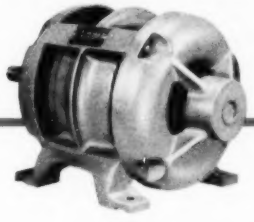
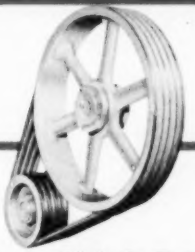
Everything from Power Line to Driven Shaft

Control



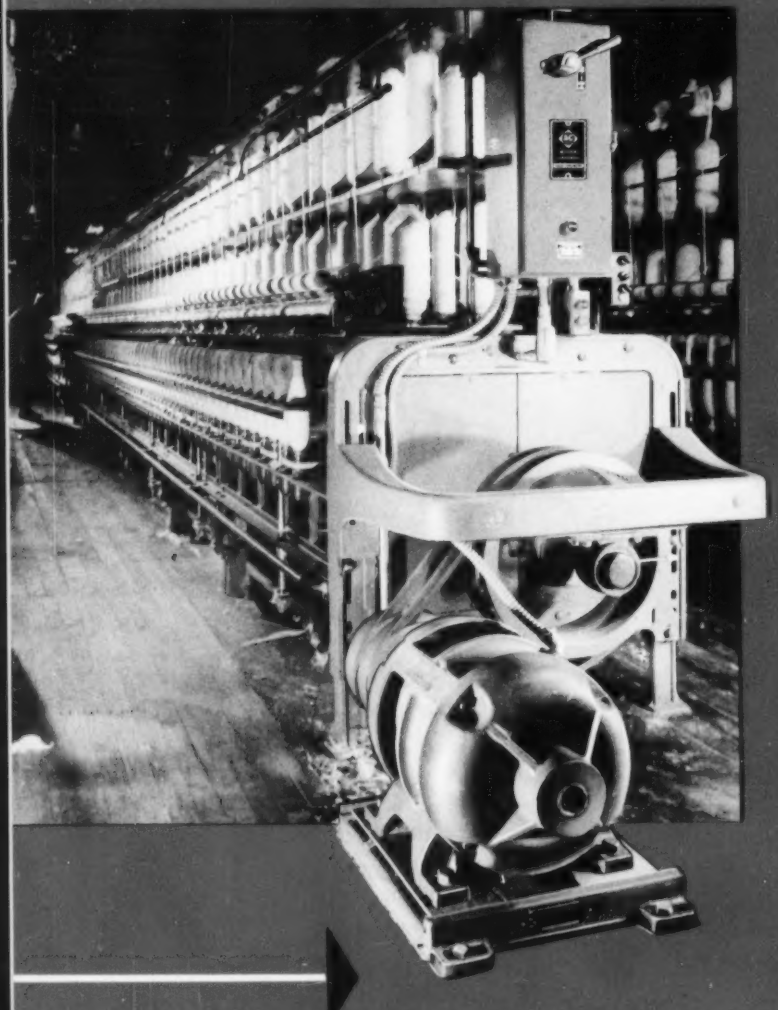
Motor



Texrope V-belt Drive

A-4081

Designed to Work Together

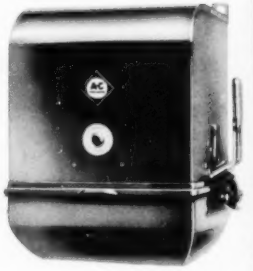


Motor Control

Allis-Chalmers motor control is available for most textile mill applications. Included in this line are manual and magnetic full voltage and reduced voltage starters. They are available in general purpose as well as special purpose enclosures. Typical are the loom switches, slow speed starters for roving frames, and combination starters, commonly used on spinning frames.

Loom switch

Combination starter



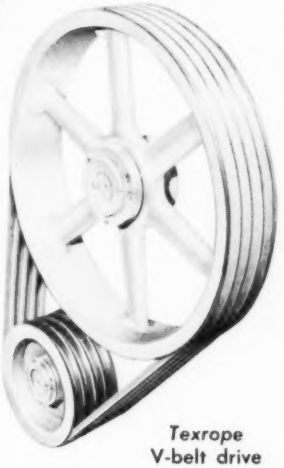
Reduced voltage starter

Everything from Power Line to Driven Shaft

Texrope Drives

Texrope V-belt drives are available in a complete range of sizes for both fixed and variable speed. Wide range *Vari-Pitch* sheaves like that shown on left add flexibility to spinning operations by providing the exact speed needed for any yarn number. New design of this sheave permits speed adjustment from the motor side instead of the hard-to-reach frame side. Other drives include standard range *Vari-Pitch* drives and constant speed *Texrope* V-belt drives. These provide smooth, quiet, efficient power transmissions for air conditioning fans and other mill equipment.

Vari-Pitch wide range drive



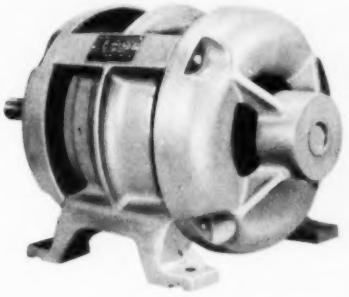
Texrope V-belt drive

Vari-Pitch stationary control drive

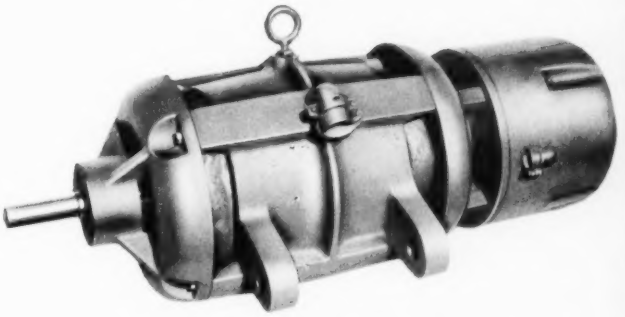
Texrope, Quick-Clean and *Vari-Pitch* are Allis-Chalmers trademarks.

Motors

There's no place for lint to hide in any of these motors. All incorporate the same basic time-proved *Quick-Clean* motor design whether they're built for roving frames, conventional spinning frames, or special spinning frames. They're all non-clogging motors designed and built to serve in the humid, lint-laden atmosphere of textile mills. Other Allis-Chalmers motors are supplied for loom, card, *Pneumafil* cleaner, air conditioning, and general mill service. In addition, these motors are backed by a nation-wide network of "Certified" Service Shops.



Quick-Clean motor for conventional spinning frames



Special motor for special spinning frame

Easy starting roving frame motor

ALLIS-CHALMERS

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Nation Wide Service

YOUR CUSTOMERS will have no trouble getting competent service on your products when you use Allis-Chalmers motors, control and drives. There are nearly 100 Allis-Chalmers Certified Service Shops located in every industrial area in the country.

Allis-Chalmers Certified Service Shops are hand-picked independent units which have been chosen for their modern equipment, efficient methods, wide experience and business integrity. These Certified Service Shops assure your customers of factory-approved parts and service methods on Allis-Chalmers drive equipment. If you use special motors, the factory makes available to all Certified Service Shops the necessary information to assure a good service job.

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Please send me the literature for designers checked below.

MOTORS

- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B

CONTROL

- ☐ Across-the-line Starters 14B7132
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***TEXROPE* DRIVES**

- ☐ Wide Range Stationary Control Sheaves 20S7590
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(Photo courtesy of Tennessee Eastman Company)

Loom-finished fabrics? Durable size!

To avoid water-spotting . . . use new STYMER LF

Today beauty meets economy right on the loom! By weaving solution-dyed acetate yarns into the new "ready-for-market" fabrics, mills can now effect important processing economies *and* give the consumer a product that is attractive, color-fast and easy to maintain.

With loom-finishing, however, appeared the need for a *durable size*—one which would lick the problems raised by leaving a water-soluble agent in the finished fabric—and Monsanto developed Stymer LF to meet this need. Sizing with Stymer LF makes it possible to produce loom-finished fabrics that *do not water-spot*—goods with a crisp, marketable hand that will not become raggy after dry cleaning.

These qualities make Stymer LF, for loom-finishing, a worthy companion to Stymer S, used industry-wide for conventional acetate sizing. For complete details on how Stymer LF will enable you to take *full advantage* of the loom-finishing process, get in touch with:

MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass. Stymer Reg. U.S. Pat. Off.

MONSANTO®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

for PRODUCTION . . .

Speeds over 500 courses per minute on standard patterns and constructions.

for CONTROL . . .

Improved new yarn let-off and cloth take-up motions provide accurate control of cloth quality.

for FLEXIBILITY . . .

A far wider range of cloth patterns and qualities can now be produced.

for SIMPLICITY . . .

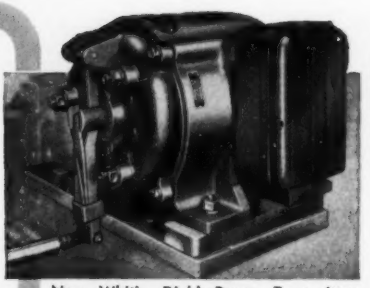
All parts are more accessible for services and all adjustments can be made simply and quickly.

. . . for all 'round

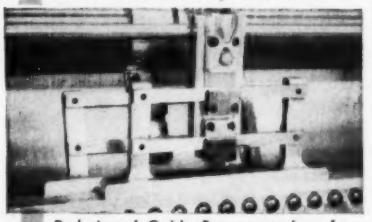
Top Performance

. . . it's the new WHITIN

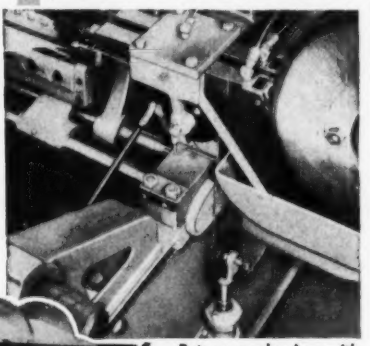
MODEL "D" TRICOT KNITTER



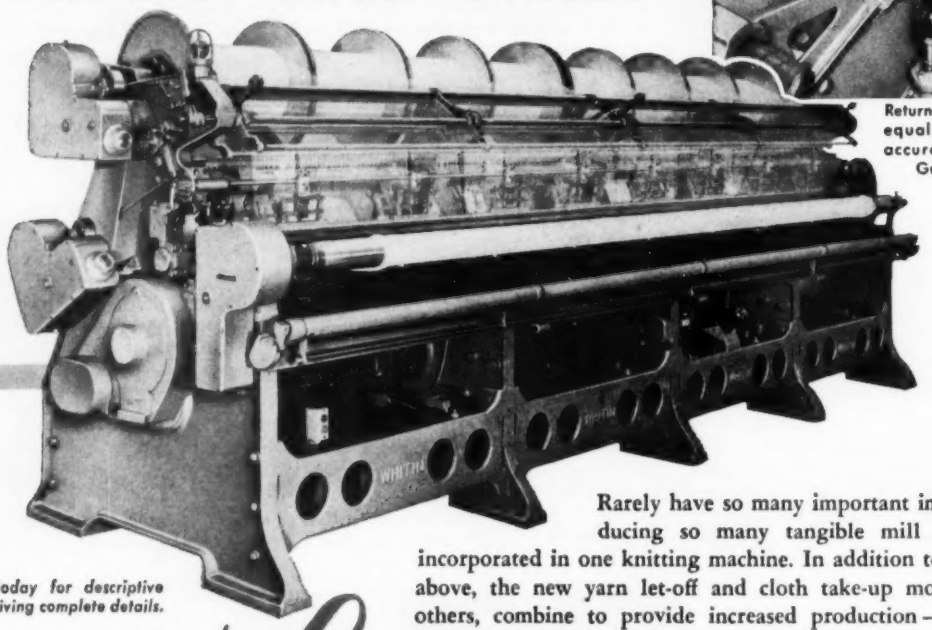
New Whitin Diehl Power Transmitter for instantaneous stop and start.



Redesigned Guide Bar suspensions for positive lock down position of front bar.



Return mechanism with equalizing spring for accurate control of Guide Bar motion.



Write today for descriptive folder giving complete details.

Rarely have so many important improvements, producing so many tangible mill advantages, been incorporated in one knitting machine. In addition to those illustrated above, the new yarn let-off and cloth take-up motions, plus many others, combine to provide increased production — improved cloth quality — and low operating and maintenance costs.

Whitin MACHINE WORKS

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Nopco* Balanced-performance Wool and Worsted Aids mean stronger, more even yarns

Nopco lubricants for wool and worsted yarns and blends containing synthetics are proving without equal in mills around the country. These outstanding textile chemicals always assure:

balanced fiber lubrication • fiber to fiber cohesion • fiber to metal lubricity excellent antistatic control

You'll cut waste and promote economies all along the line by putting one or more of these balanced performers to work for you:

NOPCO FUA—a self-fulling, self-scouring *wool* lubricant that acts as an oil on the fibers and like a soap in wet finishing.

NOPCO 1656-R—a specially developed *worsted* oil. Permits static-free running even under the most difficult conditions.

NOPCO 2203—an outstanding *wool* oil. Self-emulsifiable in water. Unusual spreading power. Scours freely.

NOPCO 1056-C—a low cost *wool* lubricant with "built-in" features of antistatic control, ready scourability, and freedom from yellowing.

NOPCO CP—a time-tested replacement for olive oil in the processing of *wool* and *worsted* yarns. Combines spreading power with correct drag. (Also available in water-soluble form as Nopco CP Soluble.)

Here are processing aids that help step up production . . . increase profits. Our specialists will gladly work closely with you—in your own mill, if you wish—to make sure you obtain the best possible results.

Ask your Nopco representative to give you a copy of this time-saving chart for preparing wool emulsions—and also Nopco's new data on wool, worsted, and tow-to-top converting oils.

TO PREPARE 50 GALLONS OF EMULSION										
For a ratio of one part oil ...	1	1	1	1	1	1	1	1	1	1
to these parts H O	1	2	3	4	5	6	7	8	9	10
Weigh these pounds of oil	208	138	104	83	69.2	59.3	51.5	46.2	41.5	37.8
Measure these gallons of H O	25	33.3	37.5	40	41.7	42.9	43.8	44.4	45	45.4
Resultant percentage emulsion	50	33.3	25	20	16.7	14.3	12.5	11.1	10	9.1
Each gallon of this emulsion added to 100 lbs. stock leaves this per cent oil on stock ...	4.2	2.8	2.1	1.7	1.4	1.2	1.0	0.92	0.83	0.75

*Reg. U.S. Pat. Off.

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A bookful of moneysaving ideas for cotton and rayon men

Could you use ideas on cutting costs and improving your operations? This new free Westinghouse book is full of them. Here are a few examples.

NO MORE LINT PROBLEMS

You can end lint problems in your motors and controls—right now. Lint blows right through the Westinghouse Lint-Free Motor so it can't cause trouble. And Westinghouse Lint-Tight Starters have special enclosures so that the lint can't get in to create a fire hazard. These motors and controls are available in a complete range of sizes and models to handle any problem in your mill.

IMPROVED SLASHING

This book covers many specially engineered drives. For example, the famous Westinghouse multi-motor slasher drive which provides constant warp tension and results in more uniform beams. There's no jerky clutch operation. This permits higher slasher speeds and reduces maintenance. You save money and get better beams.

BIG WEAVE-ROOM SAVINGS

Installing the new Westinghouse loom motors is one of the biggest improvements a mill can make. These motors need no lubrication so you save all that trouble and expense. They save on power and they drive the looms smoothly because of a precise combination of the right torque and flywheel effect.

BETTER FINISHING

If you operate a finishing plant you can get much better control of tne operations with new Westinghouse drives. On bleaching, dyeing and mercerizing ranges, for example, Westinghouse adjustable voltage drives give you high production with simple operation and excellent flexibility.

CALL WESTINGHOUSE ON YOUR NEXT PROJECT

These are just a few of the savings outlined in this book. Write for your copy right now. And whenever you're planning *any* new mill project, be sure to call your Westinghouse office early.

WRITE FOR B-4799 . . . "Electrical Equipment for Cotton & Rayon Mills". Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94915

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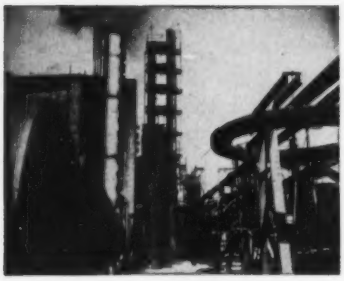
Westinghouse

EQUIPMENT FOR TEXTILE PRODUCTION

They did what you can do to reduce costs

Why Select Pittsburgh Dyestuffs?

Here are 4 Good Reasons



1 Basic Position

Pittsburgh is a basic producer of dyestuffs. Every step of production, from coal to finished color, is rigidly controlled in a single, integrated plant. Pittsburgh's Coal Chemical Division provides the new Fine Chemicals plant with an unfailing source of dye-making chemicals, including sulphuric acid, phthalic anhydride, benzol, phenol and pyridine. This assures you uniform high quality and dependable supplies, regardless of marketing conditions.

2 Modern Production Equipment

Completed early this year, the Pittsburgh Fine Chemicals plant is engineered and equipped with the most modern production equipment. Stainless steel and glass lined reaction vessels enable a high degree of purity standardization. Most materials are efficiently conveyed through pipes, and reactions are controlled by automatic equipment. The plant is also equipped with modern solvent recovery and waste disposal systems.

3 Complete Quality Control

To carry on the exacting quality control exercised by Pittsburgh's Coal Chemicals Division in the production of dye intermediates, the Fine Chemicals plant maintains modern and completely equipped research, analytical and applications laboratories where all production and application processes can be duplicated on a laboratory scale. A continuing research and development program is conducted to produce new and better products and improved application techniques.

4 Efficient Customer Service

Working closely with the applications laboratory, the Customer Service Department of the Fine Chemicals Division provides you with laboratory or plant assistance in the application of Pittsburgh Vat Dyes. Through this department, the complete laboratory facilities of the division are at your service, to help you achieve better and more efficient dyeing results.

. . and of course,
for your convenience,
Pittsburgh Dye Drums
are Color-Coded

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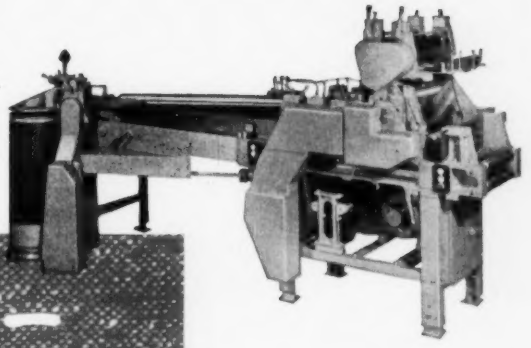
COAL CHEMICALS • AGRICULTURAL CHEMICALS • FINE CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

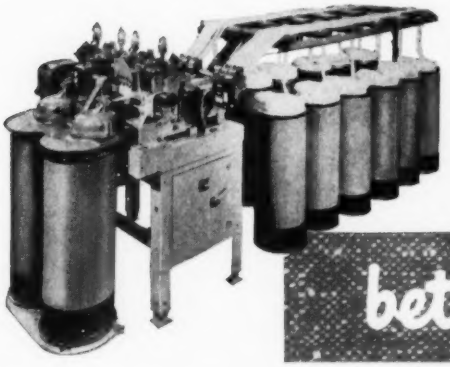
WARNER & SWASEY-PACIFIC CONVERTER

Now, in one efficient operation, the Converter cuts synthetic tow to desired lengths, evenly blends these fibers in exact percentages (or with wool or other fibers), delivering drawn sliver, sufficiently crimped for the subsequent drawing operations. It cuts costs on machines and labor—completely eliminating the opening, mixing, carding and combing operations of cut staple. Using the Converter and Pin Drafter in combination produces highest quality yarn with excellent uniformity of counts and evenness, and high tensile strength.



You can produce it—

WARNER & SWASEY PIN DRAFTER

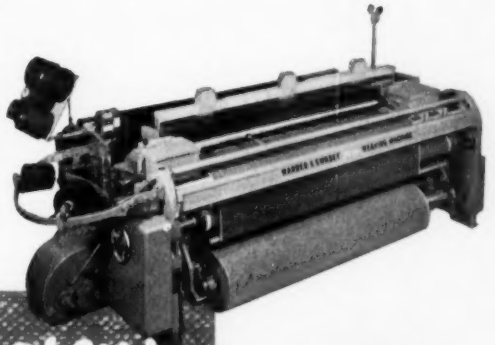


Pin Drafters produce better, more evenly blended sliver in greater volume—handling wool or synthetics, blends of either or both. Used in combing or drawing rooms, they eliminate machines and costly steps in the preparation of sliver for roving, and drastically reduce waste. Pin Drafters use either combed sliver or ball top—deliver to coiler cans or to single or double meche balls. Applicable to Bradford, French or American systems. Pin Drafters have established outstanding records for dependable service and low maintenance while building profits for hundreds of mills.

better, faster, for less—

WARNER & SWASEY-SULZER WEAVING MACHINE

This revolutionary new weaving machine has speeded production, improved quality of fabrics, and cut costs in every mill where it has been installed. Operating up to 240 picks per minute, filling is inserted by a series of small steel shuttles drawing directly from a large package. This eliminates many operations of the conventional bobbin-shuttle combination—bobbin winding, stripping, inspection, storage—in addition to simplifying handling and yarn inventory. This new machine drastically cuts mending costs and seconds. Savings in floor space and labor reduce overhead. Machines are available in reed widths of 80", 95" and 110", and one or more widths of cloth can be woven at one time on all sizes.



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WARNER & SWASEY
TEXTILE MACHINERY DIVISION

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How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, —whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

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VICTOR Ring Travelers

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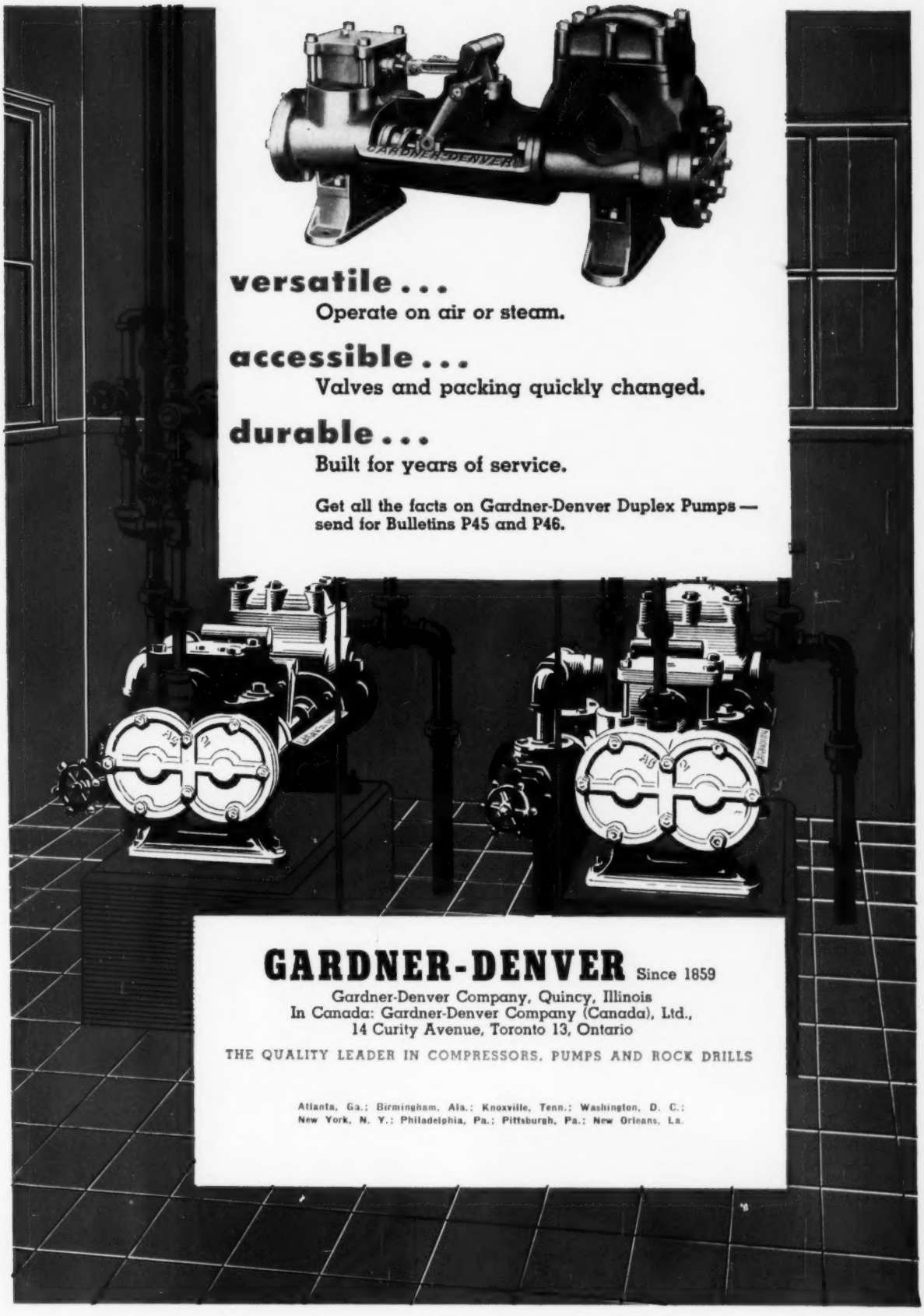

versatile . . .

Operate on air or steam.

accessible . . .

Valves and packing quickly changed.

durable . . .

Built for years of service.

Get all the facts on Gardner-Denver Duplex Pumps — send for Bulletins P45 and P46.

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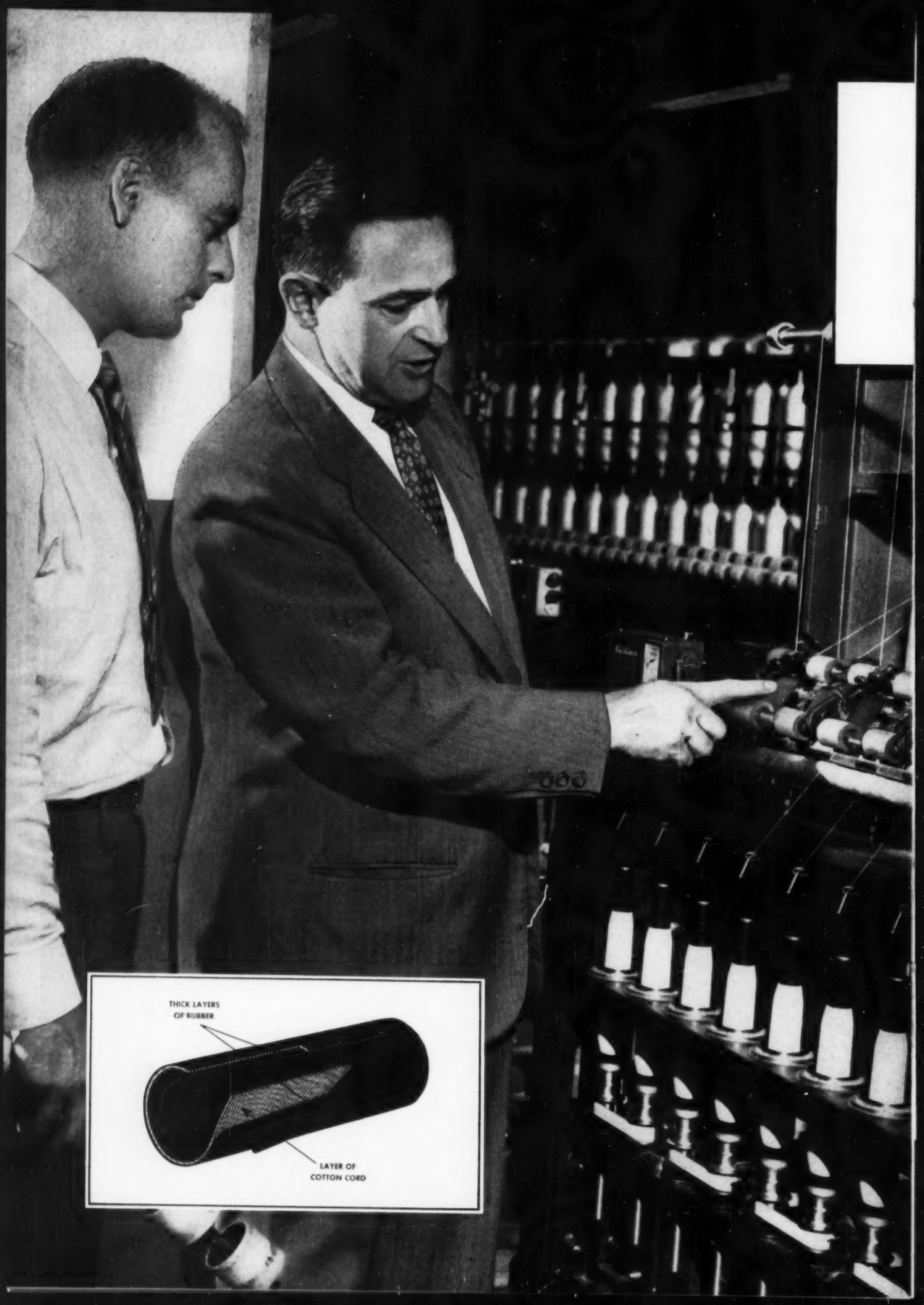

THICK LAYERS
OF RUBBER
LAYER OF
COTTON CORD

These long-wearing aprons help reduce yarn variation

Designed for modern textile machinery, Armstrong's Accotex® Aprons have the smoothness and uniformity absolutely necessary for spinning clean, uniform yarn.

They have no seams to cause yarn irregularities or to give the erratic slip-roll action that's a frequent source of yarn faults on single-apron systems.

Just as important, every apron in a shipment of Armstrong's Aprons is alike. Like the machinery they run on, these aprons are precision-made. Each is carefully ground to the exact dimensions you specify and caliper-checked regularly to maintain this dimensional accuracy.

The cutaway drawing on the opposite page shows you how Armstrong's Accotex Aprons are made. The seamless outer layer is as smooth as this page. To make it that way, scuff-resistant synthetic rubber is given a satin finish and then treated chemically so it will stay smooth.

The middle layer of the apron is a band of strong cords that prevents stretching and curled edges, yet allows complete flexibility. The inside layer is synthetic rubber specially compounded to resist the abrasion it gets from the nose bar. Vulcanized together, these three layers form a strong, flexible apron that runs clean, handles yarn well, and gives 6 to 8 years of continuous service on most frames.

If you'd like to try aprons that perform like this, ask your Armstrong man to arrange for a test frame or write Armstrong Cork Co., Textile Products Dept., 6406 Dauphin St., Lancaster, Pa. Available for export.

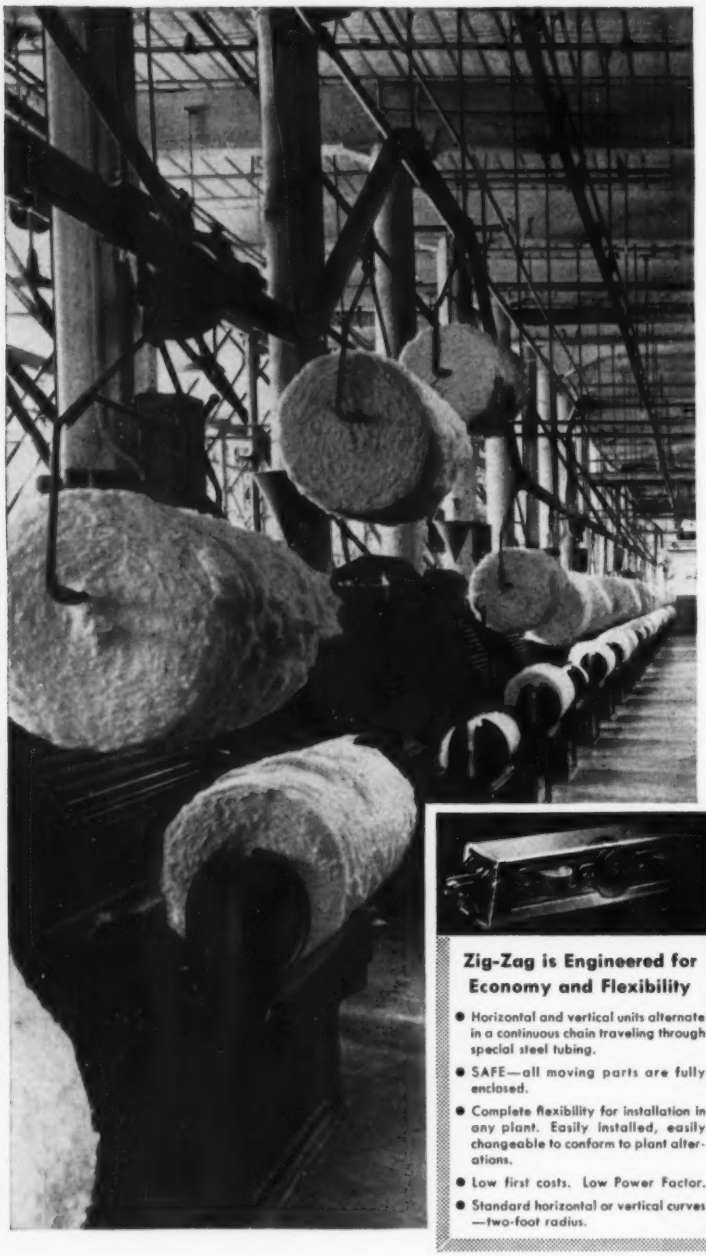
SEAMLESS. An Armstrong's Apron has no seams to crack or break, no seams to cause uneven drafting. On single-apron frames, the apron's super-flexibility lets it hug the nose bar, insures smooth slip-roll action.

SMOOTH FINISH. Your fingers will tell you that Accotex Aprons have a satiny feel. They're precision-ground to exact size, then given a patented treatment to make the surface smooth, clean-running, and scuff-resistant.

ARMSTRONG'S ACCOTEX APRONS

one of Armstrong's complete line of textile mill supplies

Get maximum efficiency from production space



with R-W "Zig-Zag"®

Continuous Power Conveyors

Modern industrial methods call for maximum utilization of existing space for production and processing lines. And the materials handling problem is effectively solved with R-W ZIG-ZAG Continuous Power Conveyors. ZIG-ZAG keeps things moving—curving around and above crowded, congested areas. It releases valuable space for extra production . . . releases valuable workers for other jobs . . . reduces handling mishaps and bottlenecks to a minimum.

* * *

Find out how you can lower production costs and get maximum efficiency from your existing space. Write today for consultation. There's no obligation on your part.

Zig-Zag is Engineered for Economy and Flexibility

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- SAFE—all moving parts are fully enclosed.
- Complete flexibility for installation in any plant. Easily installed, easily changeable to conform to plant alterations.
- Low first costs. Low Power Factor.
- Standard horizontal or vertical curves —two-foot radius.

1880 RICHARDS WILCOX R-W AURORA TRADE MARK Reg. U. S. Pat. Off. 1953

SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT • INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS • ELEVATOR DOOR OPERATING EQUIPMENT

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

446 THIRD STREET, AURORA, ILLINOIS

There's a *simple* way to solve what appears to be a complex speed reduction problem

Get the proper drive combination that best meets your requirements from the broad LINK-BELT line

YOU'LL find your power transmission costs are lowered several ways when you use Link-Belt enclosed gear drives. First, Link-Belt offers a broad range of types and sizes in helical, herringbone and worm gear designs. You get the *one* reducer best suited to your needs.

In addition, Link-Belt builds a complete line of power transmission machinery. Installation and alignment are simplified because dimensions of Link-Belt chains and sprockets, bearings and couplings are all coordinated. And there's no need to call in another firm for any information or assistance.

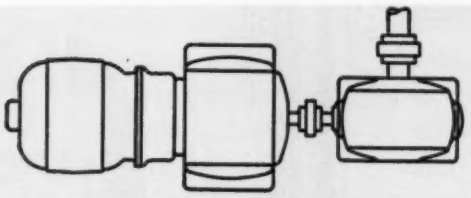
This overall integration—plus the long life built into every piece of Link-Belt equipment—guarantees optimum efficiency. Result: lower power consumption and maintenance costs.

Make the nearby Link-Belt sales office or distributor your power transmission headquarters. Nowhere else can you get the great selectivity that assures you of the best in enclosed gear drive applications.

LINK-BELT

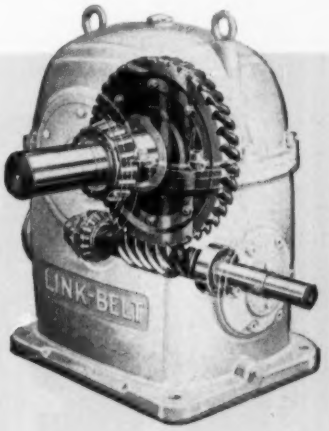
ENCLOSED GEAR DRIVES 13,127

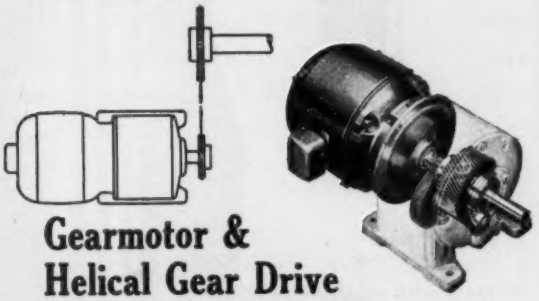
LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.



Worm Gear Drive

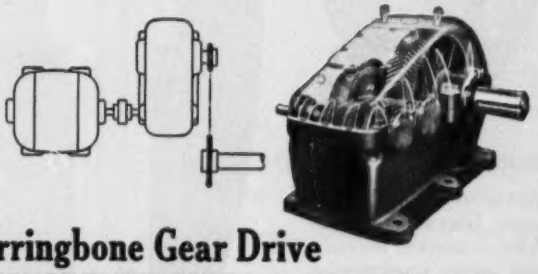
WORM GEAR and P.I.V. variable speed drives are shown direct-coupled. Link-Belt worm gear drives are available in 3.1:1 to 8000:1 reduction ratios—1400 to 123,000 in. lbs. torque—0.22 to 564 output shaft rpm. Ask for Book 2324A.





Gearmotor & Helical Gear Drive

GEARMOTOR is shown with roller chain drive. Link-Belt Helical Gear Drives, Gearmotors and Motogears are available in 6.2:1 to 292:1 reduction ratios—1 to 30 hp—6 to 280 output shaft rpm. Ask for Books 2247 and 2451.



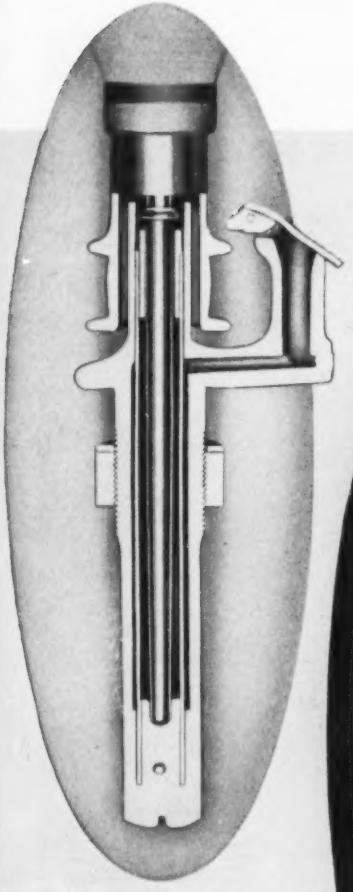
Herringbone Gear Drive

HERRINGBONE GEAR DRIVE is shown connected by flexible coupling to motor and with roller chain takeoff. Link-Belt Herringbone Gear Drives are available in 2.84:1 to 326:1 ratios—0.4 to 2480 hp—2.2 to 623 output shaft rpm. Ask for Book 2519.

You can reduce spinning costs

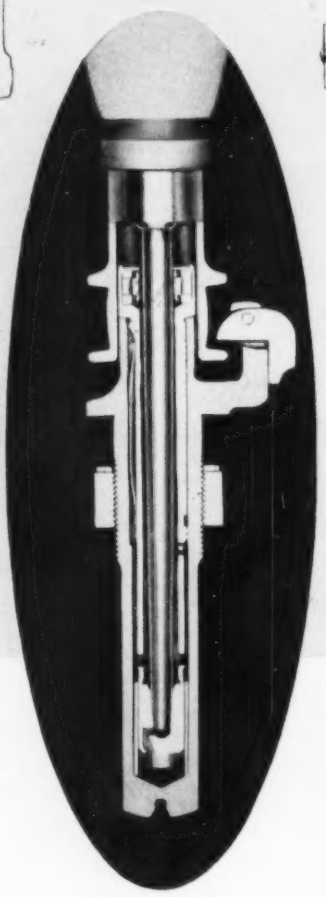
with Gulfspin,

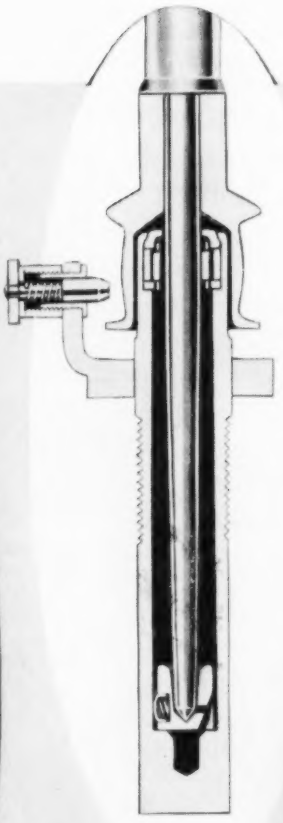
the only spindle oil that



↑
Spindle with sleeve-type bearing. Because it will not thicken in service, Gulfspin keeps power consumption low.

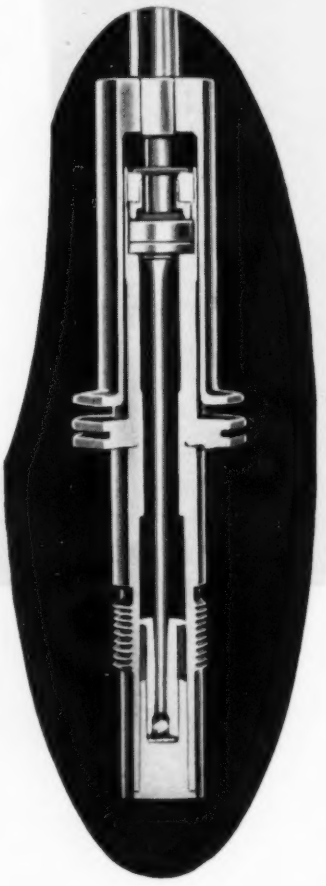
Spindle with roller bearing. Gulfspin prevents rusting and wear, reduces ends down. ↓





↑
Spindle with spring-type vibration dampening device. Absence of sludge with Gulfspin insures proper dampening at all times.

Sealed spindle with roller bearing at top and plain foot-step bearing. Gulfspin's high resistance to oxidation and deterioration makes it ideal for this application. ↓

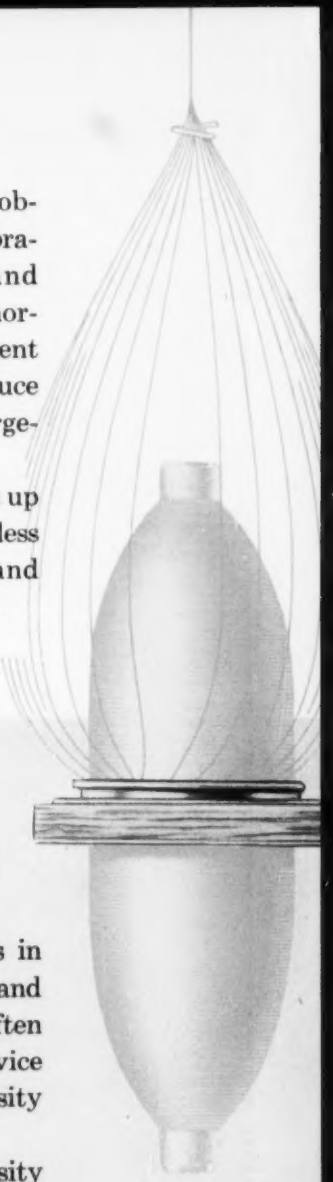


1 Keeps spindles and bolsters clean . . . no deposits of any kind

Gulfspin works three ways to keep spindles absolutely clean. First, it has the inherent ability to resist sludge formation—it's oxidation stabilized. Second, Gulfspin prevents contaminants from depositing on spindle parts. Third, Gulfspin provides effective protection against rust, especially important in cast-iron bolsters where rusting causes bolster wear and discoloration of the lubricant.

Because deposits are not a problem with Gulfspin, spindle vibration is kept to a minimum and dampening devices function normally. Gulfspin also has excellent oiliness characteristics, which reduce the rate of wear and prevent enlargement of spindle clearances.

This kind of performance adds up to smooth spindle operation, less vibration, fewer ends down, and rock-bottom maintenance costs.



2 Prevents increase in power consumption . . . does not thicken in service

When we remember that spinning frames may consume as much as 60% of the total power used by a textile mill, it is evident that appreciable savings in power consumption here are worth while.

For spindle lubrication, equipment manufacturers and lubricant suppliers recommend oils of low viscosity which will have the necessary film-forming properties and dampening effects. But what if this carefully selected viscosity increases appreciably when the oil comes in contact with dirt, lint, water, and oxygen? Ordinary spindle oils often thicken after a few months of service and may show a gain in viscosity of 10 to 20 Saybolt Seconds.

Such an increase in oil viscosity results in a power increase of about 1 watt per spindle, 200 watts per frame, 20,000 watts per 100 frames! Converted to dollars and cents, this might total a substantial sum.

Save on power with Gulfspin!

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
1934 Gulf Building, Pittsburgh 30, Pa. TW

Please send me, without obligation, a copy of your pamphlet entitled "Gulfspin."

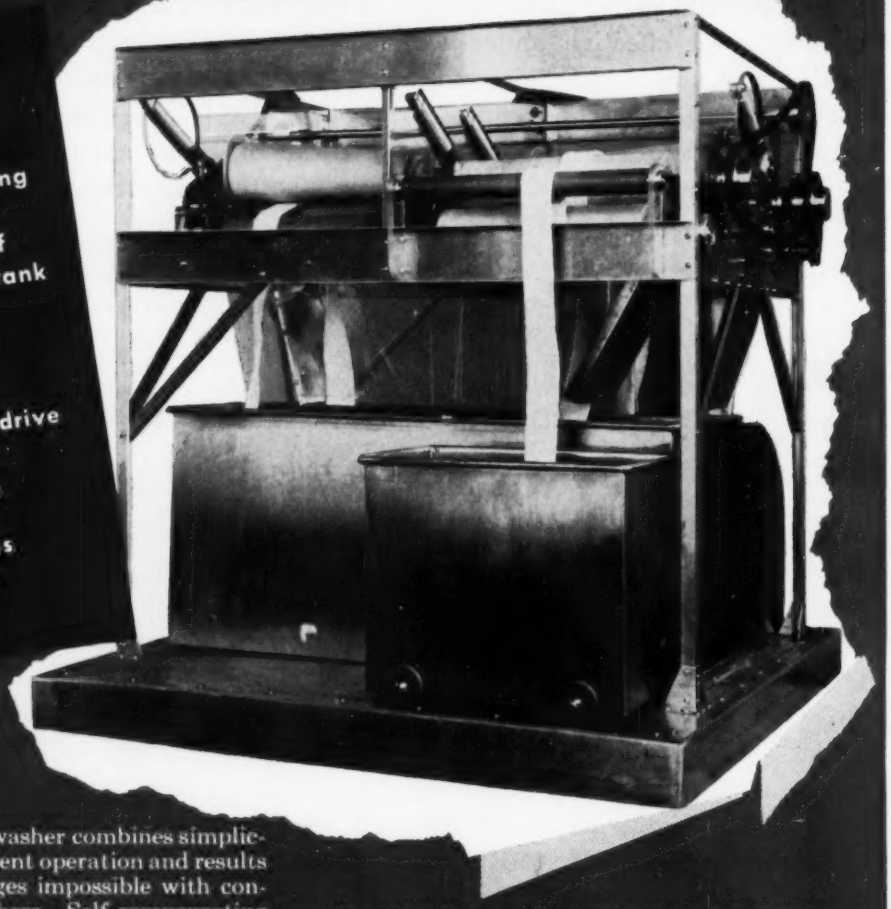
Name .....
Company .....
Title .....
Address .....

PROCTOR

CON-O-MATIC WASHER

offers these advantages

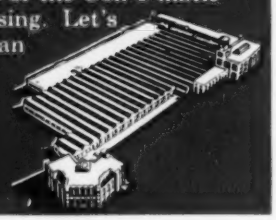
- Tension free operation
- Self-compensating rollers keep an even amount of fabric in each tank
- Less operator attention
- Simplicity of drive reduces maintenance
- Requires less floor space



Proctor Con-o-matic washer combines simplicity of design withrefficient operation and results in operating advantages impossible with conventional slack washers. Self-compensating rollers keep an even amount of fabric in each tank, without any effort or attention on the part of the operator. Through the use of tapered squeeze rolls (patent applied for), tanks are kept filled to the desired level automatically, thus insuring tension free operation.

Since synchronization is accomplished without elaborate drives, maintenance is drastically reduced.

Considered first as a washer, the basic principle used in the Proctor Con-o-matic makes it adaptable for use as a saturator, or in a dye process. It can be used wherever fabrics are to be processed in liquid. Proctor engineers are prepared to discuss procedures for determining other possible uses of the Con-o-matic washer for textile processing. Let's consider together how it can improve your operation.



PROCTOR & SCHWARTZ, INC. • 710 Tabor Road
Philadelphia 20, Pa.

3 YEARS IN THE BUILDING! THE MOST MODERN PLANT OF ITS KIND!
NOW IN OPERATION!

"CIBA TOMS RIVER"

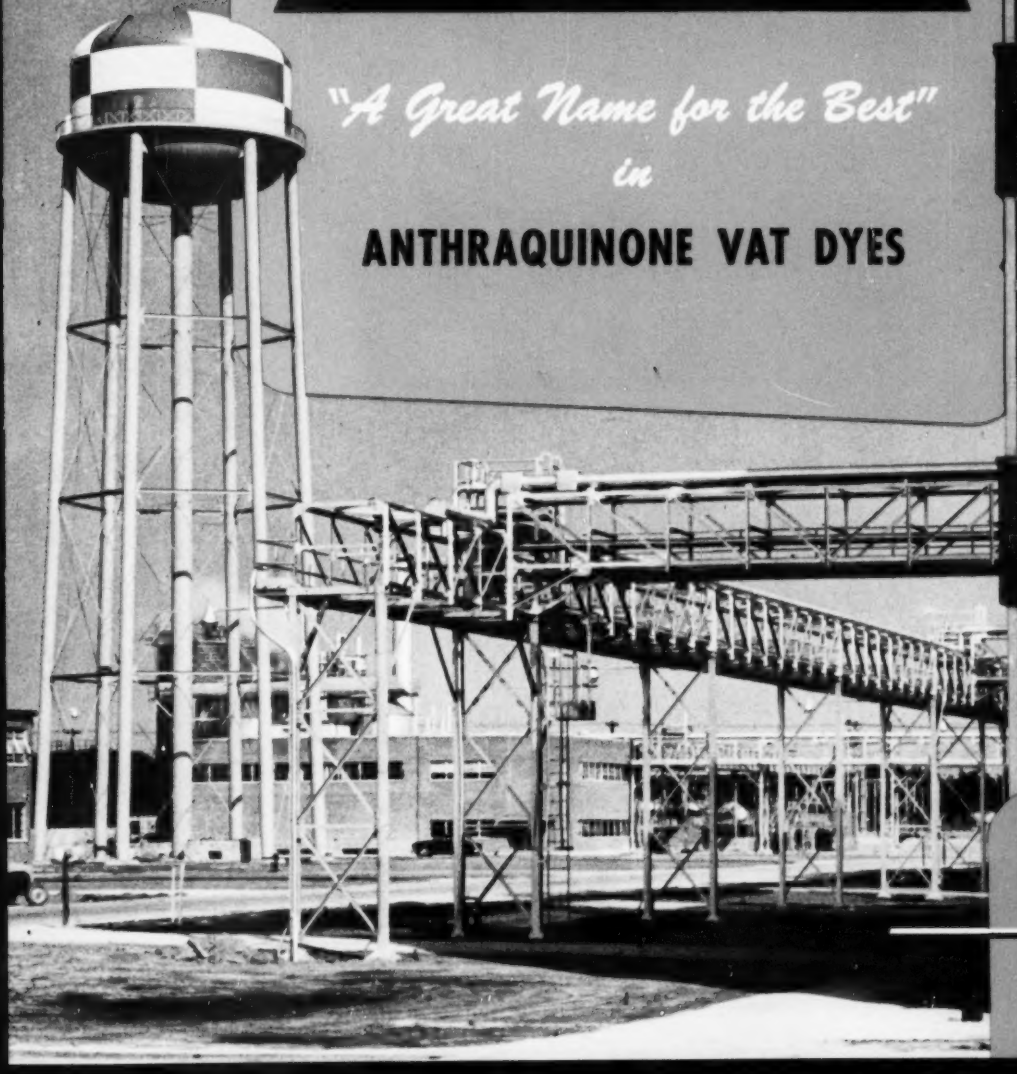
the Home of

CIBANONE®

DYESTUFFS

"A Great Name for the Best"
in

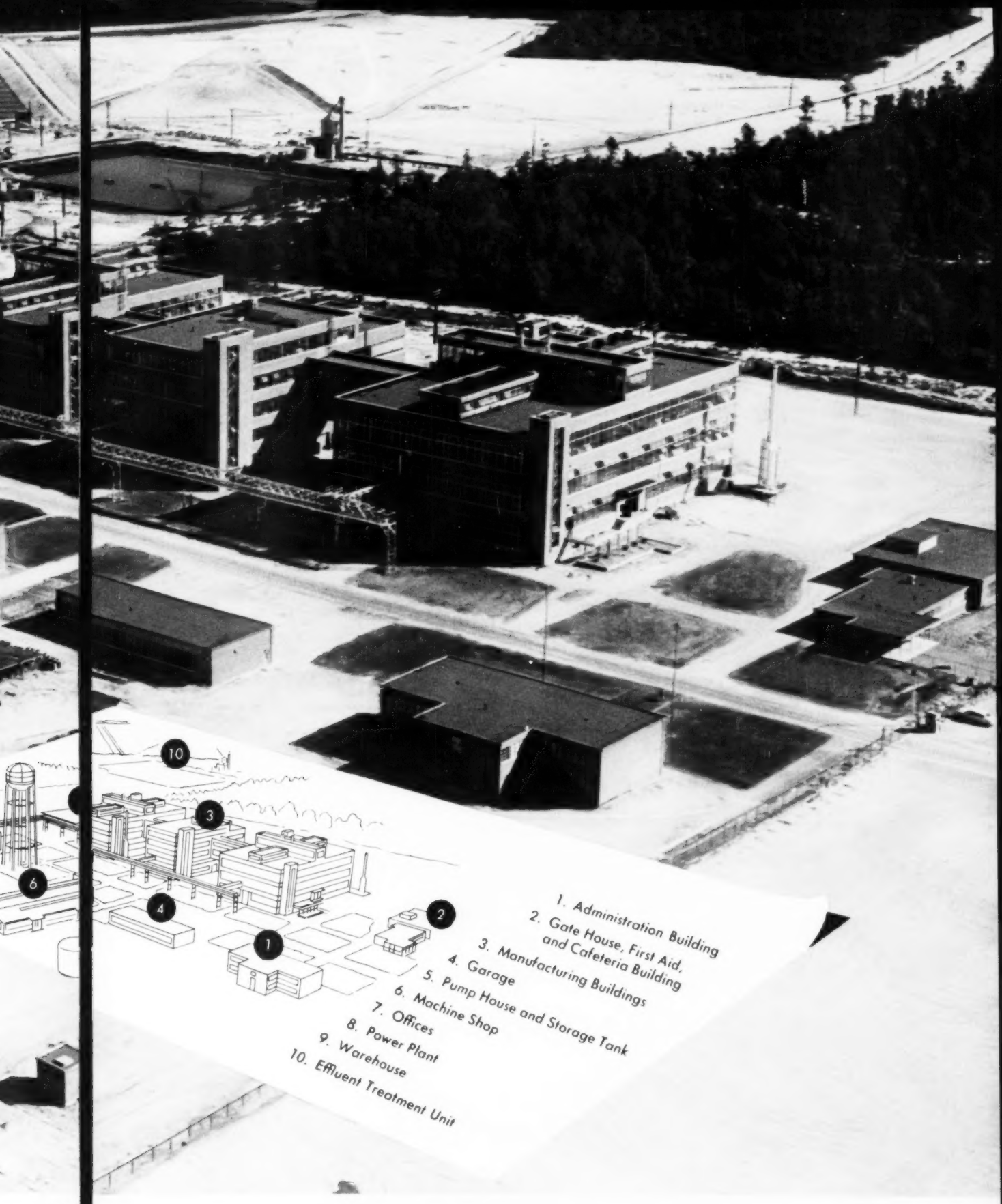
ANTHRAQUINONE VAT DYES



The Toms River Plant
its products and services
are illustrated

and described on
the following pages.

This is CIBA *"Toms River"*. *the*

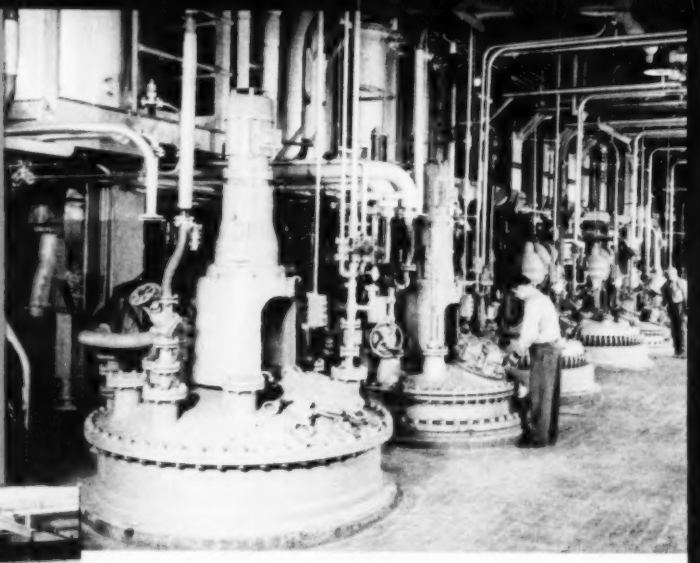


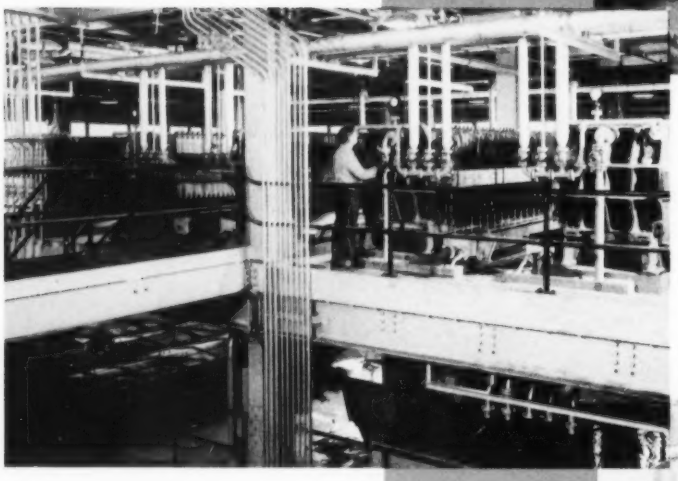
ver". the most modern plant of its kind

MODERN!

One of the rows of reaction kettles at Ciba "Toms River," the starting point in the complicated process of vat dye manufacture.

The dyestuff slurries are de-watered in these filter presses. The press cake is the crude dye which is chemically finished and further processed to usable form.

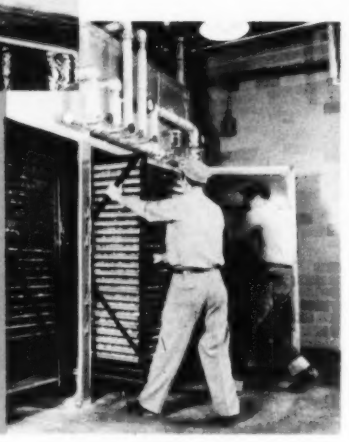




EFFICIENT!

QUALITY CONTROLLED PRODUCTION!

The wet filter cake is dried either in vacuum chamber dryers or in air dryers.

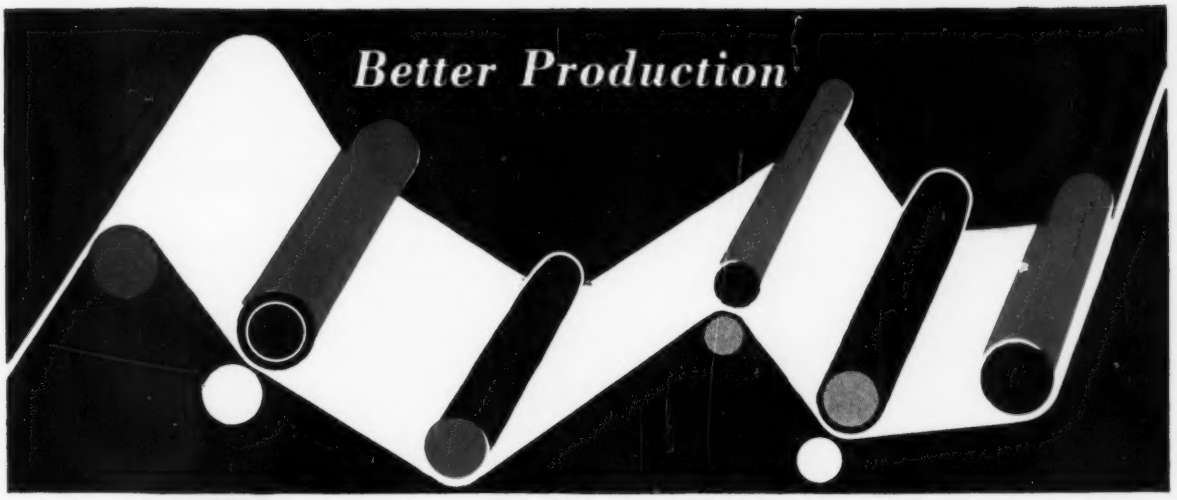


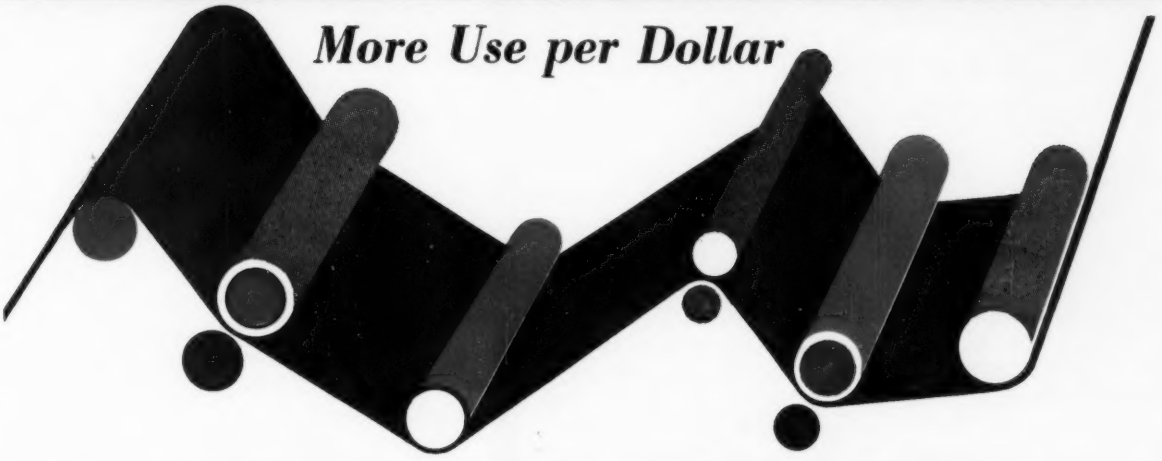
In becoming Ciba's headquarters for greatly expanded production of anthraquinone vat colors, the new Ciba Plant at Toms River, New Jersey, erected at a cost of more than $17,000,000 and covering an area of more than 35 acres will provide a timely, major extension of product service and technical counsel for users of dyestuffs. Thus will Ciba meet the constantly increasing demand for more dyes of a class that is distinguished for exceptional fastness to light and washing.

LOOK TO THIS SUPERIOR SOURCE TO MEET YOUR VAT COLOR NEEDS

CIBA

Printed in U.S.A.





MANHATTAN RUBBER COVERED ROLLS

• OUR NEW NEENAH, WIS. PLANT IS DESIGNED FROM THE GROUND UP TO HANDLE ANY SIZE ROLL COVERING MOST EFFICIENTLY.

You get better production with Manhattan rolls, because they maintain uniform density and perfect crown . . . because they don't oxidize, harden, corrugate or crack . . . and because there can be no separation of rubber from metal core. Yes, Manhattan Rubber Covered Rolls give you better production—and they do this long after you would have to replace other rolls. That's what we mean by MORE USE PER DOLLAR. A specialist from the R/M roll covering plant nearest you will cheerfully advise you or quote on your specifications. Call him next time.

ROLL COVERING PLANTS AT PASSAIC, N. J. . . . . NEENAH, WISCONSIN . . . NORTH CHARLESTON, S. C.

RM

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

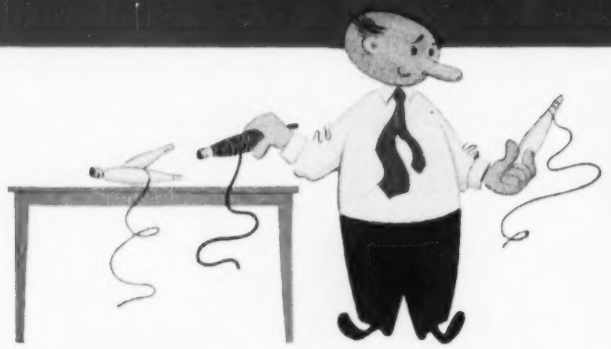
RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Packings • Brake Linings • Brake Blocks Clutch Facings • Asbestos Textiles • Sintered Metal Parts • Bowling Balls

MR-912

REEVES

—alone—gives you the choice of 3*



REEVES—with the widest application experience of *any* manufacturer in the specialized field of speed control engineering—knows as well as you do that no *one* type of drive can be the most efficient solution to *every* speed control problem encountered by machine operators and builders.

That's why REEVES builds a *complete* line . . . *three* separate and distinct types of drives . . . all incorporating the same time-tested REEVES operating principle, but each possessing *different* features of design and construction to meet the individual requirements of the individual machinery builder and user.

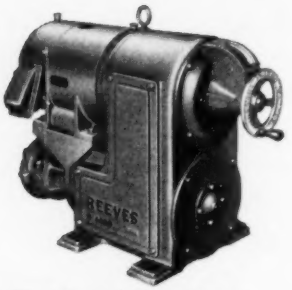
All three REEVES units are available in the widest range of designs, sizes, speed ratios and automatic controls, assuring the *right* unit for every machine . . . the *right* speed for every operation and every operator, under every changing condition.

A REEVES field engineer, thoroughly familiar with your processes, will be glad to meet with you and discuss your particular speed control problem—without obligation. You can be sure his recommendations will be completely unbiased and impartial as to the unit best suited to your needs because REEVES is the *complete* line! Write for the name of your nearest representative and for your *free* copy of the latest REEVES catalog, No. W56-1B-G.

REEVES PULLEY COMPANY · COLUMBUS, INDIANA

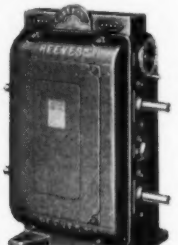
Recognized Leader in the Specialized Field of Variable Speed Control

accurate · variable **REEVES** *Speed Control*



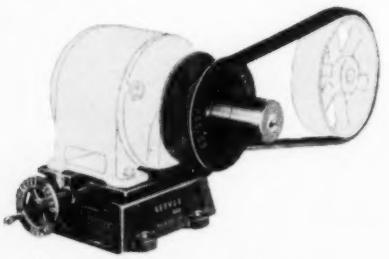
*** Vari-Speed Motodrive®**

A complete variable speed power plant. Combines any standard, constant-speed motor, REEVES speed-changing mechanism and gear reducer in one, compact unit. Sizes to 25 hp, speed ratios as great as 10 to 1.



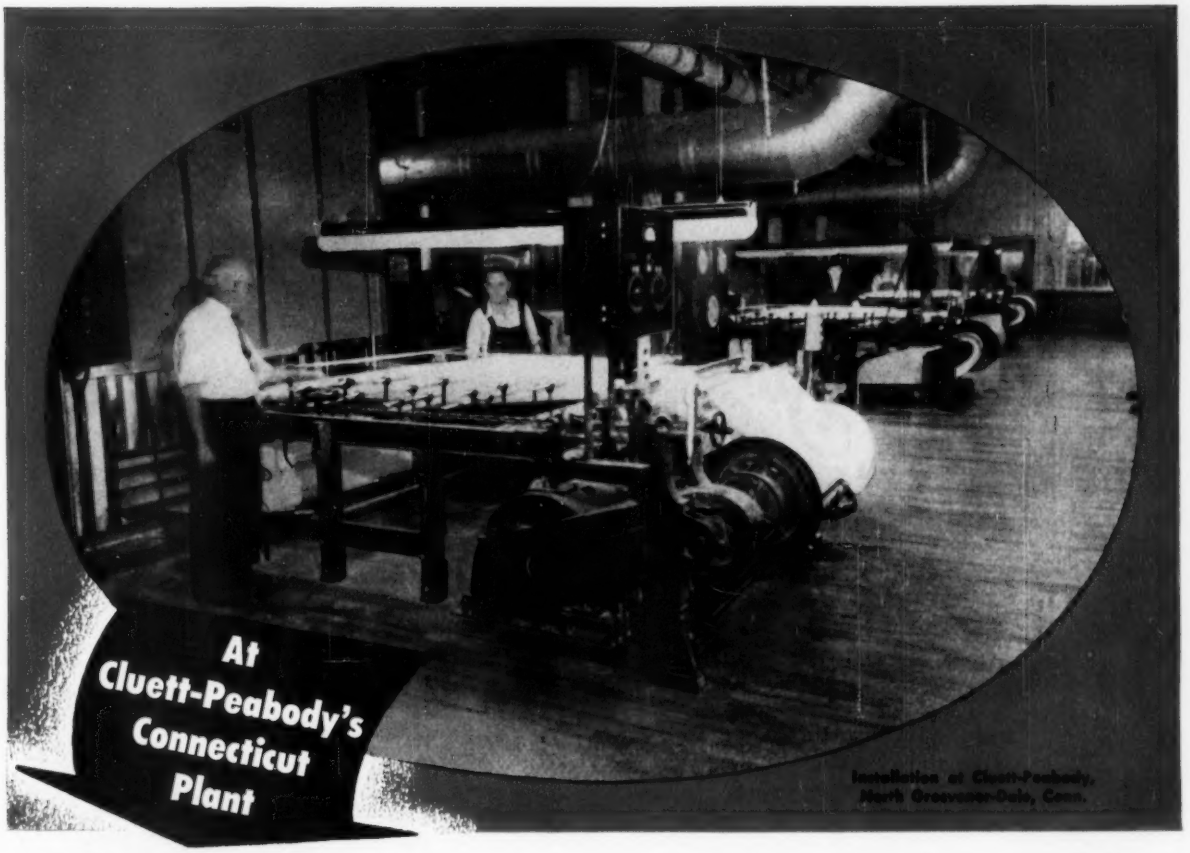
*** Variable Speed Transmission**

Provides stepless speed adjustability over a wide range—as high as 16 to 1, sizes to 87 hp. Vertical or horizontal designs—open or enclosed.



*** Vari-Speed Motor Pulley**

Converts any standard, constant-speed motor to a variable speed drive. Speed variations up to 4 to 1. Sizes to 10 hp.



6 Slashers are reduced to 3 with Uxbridge *Gentle-Air* Dryers*

In the installation shown here, the three Uxbridge "Gentle-Air" units do the work of all 6 old type slashers they replaced. Uxbridge "Gentle-Air" has proved superior over a period of years because —

1. It was developed from the mill man's point of view, to suit practical needs — not merely to produce a new machine.
2. It operates with any type of size on any type of spun yarn — cotton, woolen, worsted, man-made or blend.
3. It insures even drying with minimum stretch of the yarn, dries with as little as 1.35 lbs. steam at 24 lbs. pressure per lb. of water evaporated. Instant cooling of dryer prevents injury to either natural or man-made fiber.
4. It brings slasher room performance into line with the productive capacity of your modern looms and spinning frames.

Easy to install, the Uxbridge "Gentle-Air" Dryer operates between front and back ends of any conventional slasher, new or old. To our knowledge, not one mill that has tested Uxbridge "Gentle-Air" has thereafter installed a slasher of any other make. Write for descriptive bulletins, without obligation, or have our Engineering Department study your slasher room problems — with no sales follow-up unless you specifically request it.

SEND FOR:

BULLETIN A: Maximum Production Model, up to 1780 lbs. per hour.

BULLETIN B: Normal Production Model, up to 750 lbs. per hour.

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More warps
& **B**etter warps

*"Mill-Proved" Products — developed and manufactured by Uxbridge from the mill man's point of view. Uxbridge Chalker for filling winders. Uxbridge Easy-Rid Textile Chalk. Uxbridge Control Spray for pin drafters.

MEMO TO COST-CONSCIOUS PUMP BUYERS:

The centrifugal pump to handle your job to satisfaction and at lowest power and upkeep cost is shown or described on this page.

"Buffalo"

Pumps are not built to sell cheaply, but to operate cheaply. That is where pump savings are made. May we suggest that you and your staff write us for engineering bulletins on any pumps you need. Then look into the long-life features like oversize "Buffalo" bearings, shafts and stuffing boxes. See the accessibility of all parts, the high efficiency impeller design. You'll see why "Buffalo" Pumps save money!

BUFFALO PUMPS, INC.
184 MORTIMER STREET BUFFALO, NEW YORK
Subsidiary of Buffalo Forge Co. Canada Pumps, Ltd., Kitchener, Ont.

...and DID YOU KNOW that you can get a "Buffalo" Fan of the exact size and type you want — for ventilation, blowing, exhausting, draft, air conditioning supply. "Buffalo" has been First For Fans for 75 years. You're safe in specifying "Buffalo" for your air handling needs!

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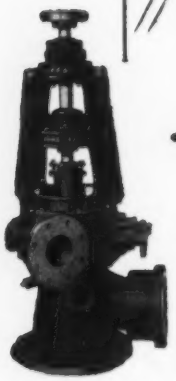
"Buffalo" PUMPS



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For trouble-free sludge circulation, agitation and removal. Vertical or horizontal models. Request Bulletin 964-G.

SUMP PUMPS
Complete units ready to install. No stuffing boxes required. Ball bearing thrust and enclosed shaft.
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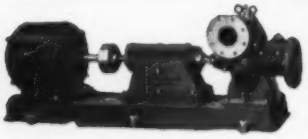

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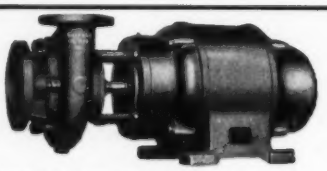

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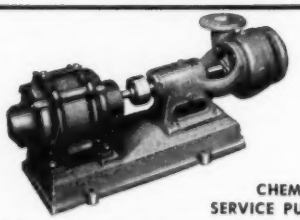
Compact, sturdy, easily installed. Shafts in permanent alignment. Bulletin 975.



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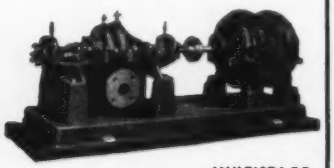
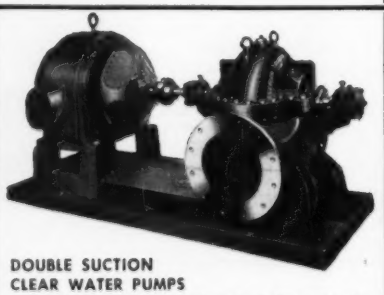
Suitable for construction in most machineable alloys. Full ball bearing, single suction. Bulletin 982.



MULTISTAGE CLEAR WATER PUMPS
for pressures up to 500 psi. Rugged, efficient, popular boiler feed pumps. Bulletin 980. "Buffalo" also manufactures automatic condensate pump and receiver units.



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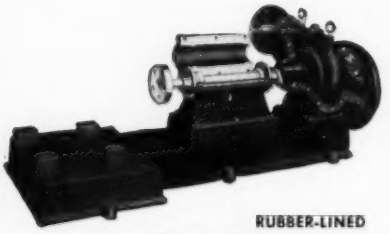
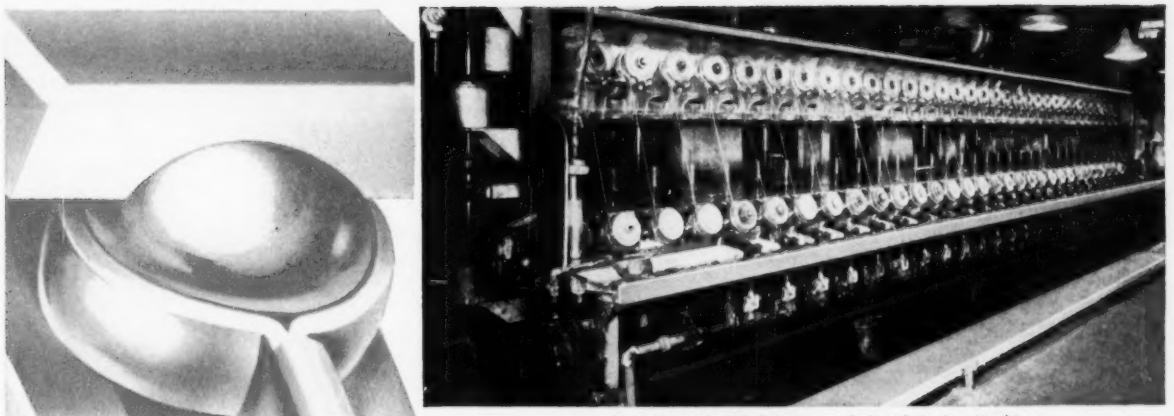
are hydraulically balanced and of finest obtainable construction. Bulletin 955.



RUBBER-LINED
"Buffalo" Rubber-Lined Pumps handle a wide variety of acids, caustics and liquids containing abrasives. All pump parts contacting liquid are covered with the proper grade of rubber. Bulletin 953.



Latest Model Double-Sided Butterworth Pot Spinning Machine

PARTNERS in PROGRESS

The latest, fast traverse Butterworth Machine for spinning synthetic filaments is evidence of the way the 140 year old H. W. Butterworth & Sons Company keeps pace with advances made in textile chemistry. This machine builds firm cakes of good density and contour at exceptionally high traverse speeds. To achieve such rapid traverse strokes plus flexible, smooth operation, Butterworth has equipped this machine with a large number of Fafnir Ball Bearings . . . on the specially designed traverse mechanism, on shafts, fly wheels and gears.

Performance such as this machine delivers doesn't happen by chance. It's the result of long cooperation between Fafnir Engineers and Butterworth Designers. Thus good bearings aren't the sole answer to progress. Equally important is the Fafnir "attitude and aptitude" . . . a way of looking at bearing problems from the designer's viewpoint, an aptitude for supplying the precise bearing to fit the need. Maybe this combination can help you. The Fafnir Bearing Company, New Britain, Conn.

Fafnir Radial Ball Bearings used on flywheel, worms and gears of machine.

Fafnir Wide Inner Ring Ball Bearing with Self-Locking Collar and Mechani-Seals used on godet and traverse drive shafts.

Fafnir Plya-Seal Ball Bearings, prepacked with grease, used on spindle for each godet wheel.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

Rayon...Acetate...Nylon...Orlon...Dacron

HONEYWELL now extends the scope of the *Moist-O-Graph* principle . . . making a single instrument capable of measuring percent moisture in *any* warp, simply by turning a switch.

used by leading mills

For mills which process varied types of fibres using different sizing materials, this advancement means that the full advantages of complete slasher control are always realized. The method has been thoroughly tested in both laboratory and mill. It is working today on acetate, viscose and nylon yarn, spun yarn, and worsted and rayon blend—sized with gelatin, starch, Stymer or Orthocryl. Among the leading mills which use *Moist-O-Graph* are:

Pansy Weaving Company — Textron
Stehli and Company — Beaunit Mills
Green Halgh Mills — Canadian Celanese
Chicopee Manufacturing Company

reads regain directly

Today's *Moist-O-Graph* incorporates features which Honeywell has developed following more than 15 years of pioneering experience in this field. Notable among these features are the instrument's direct reading scale and chart . . . the slasher operator doesn't have to interpret, consult tables. He sees on the instrument an indicated and recorded measurement that immediately tells him actual percent regain. And this calibration is made *at the factory* . . . does not require field adjustment. The measuring instrument is an *ElectroniK* recorder, famous throughout industry for accuracy and dependability.

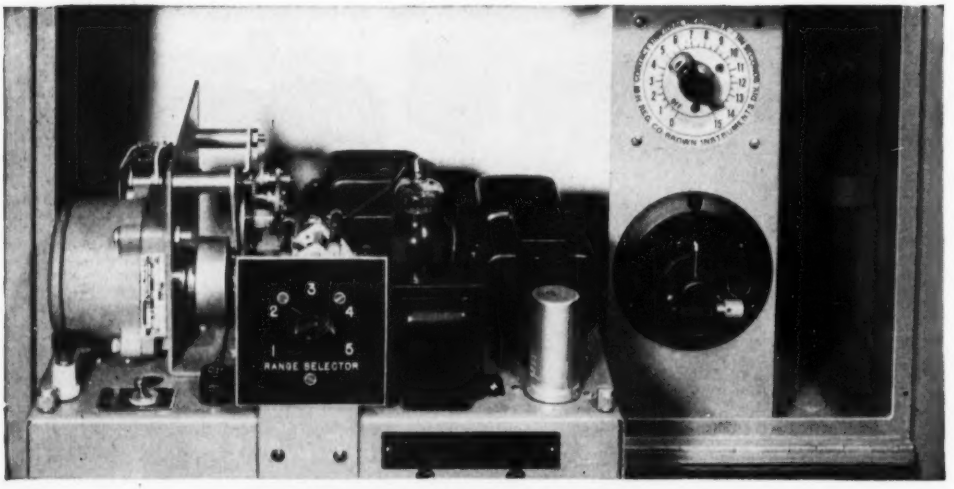
multiple range

When there's a change in the fibre fed to the slasher, or in the size used, all the operator has to do is turn a selector switch to the proper range. The calibration then applies to the new operating conditions. The only other adjustment that the operator has to make is to set the index at the desired regain.

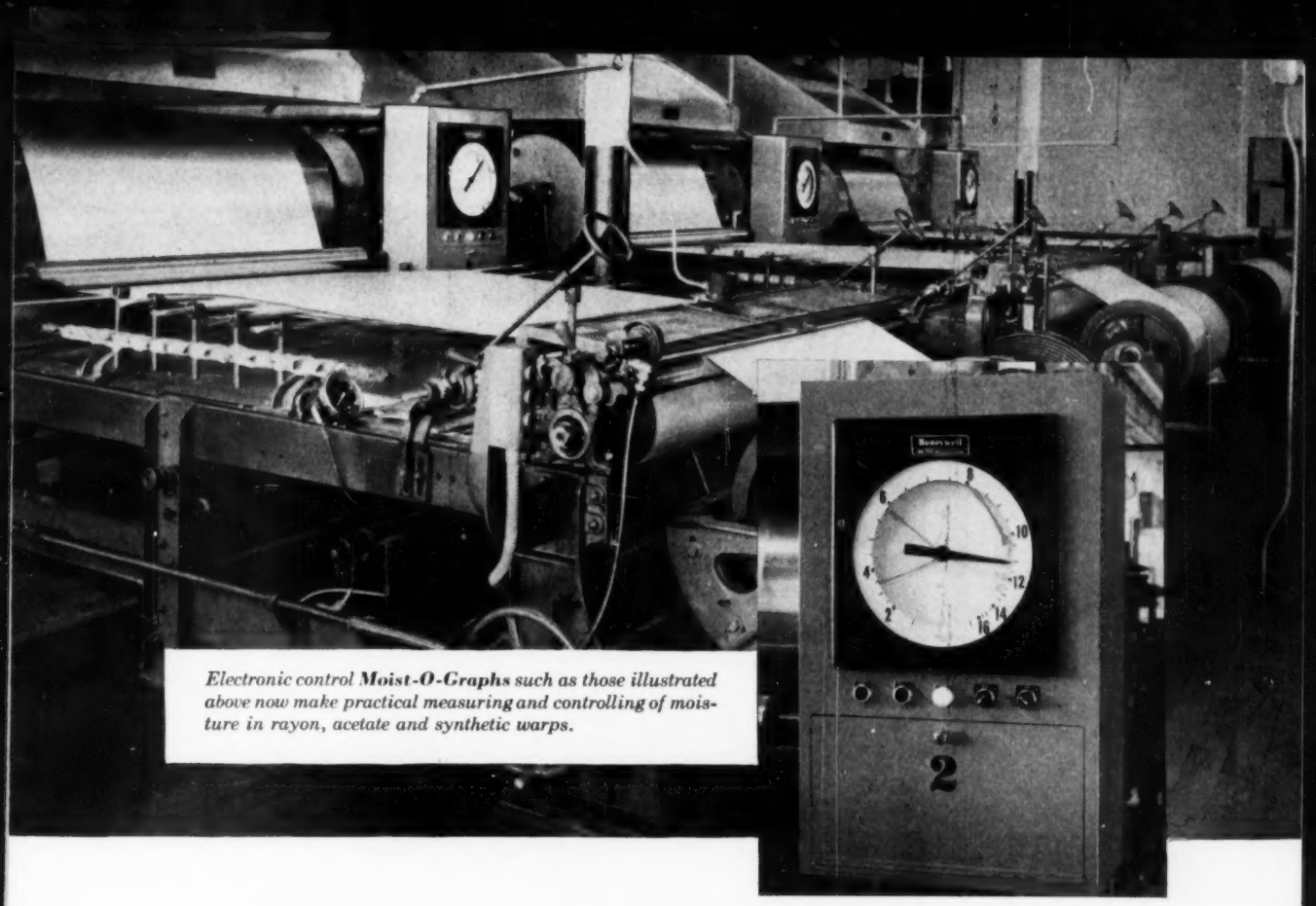
part of complete slasher system

For automatic control of regain, the *Moist-O-Graph* regulates slasher speed to maintain the correct drying rate. The result is that the slasher operates at the maximum speed possible for a given warp. This control is integrated with other Honeywell instruments, which are combined into complete systems for efficient, centralized regulation of the entire slashing process.

Moist-O-Graph®—
of rayon,



A turn of this switch changes the ***Moist-O-Graph*** *calibration to read percent regain directly, for any fibre, blend and/or size.*



Electronic control ***Moist-O-Graphs*** *such as those illustrated above now make practical measuring and controlling of moisture in rayon, acetate and synthetic warps.*

for controlled regain acetate and synthetic yarns

REGARDLESS of the fibre you're processing, you can measure and control warp moisture directly by means of the versatile, electronic multi-range *Moist-O-Graph*.

In leading mills, such as those listed on the opposite page, this instrument is making possible better weaving through more uniform warp, by controlling at uniform moisture . . . providing correct moisture . . . preventing wet warp . . . eliminating overdrying . . . and assuring uniform stretch.

Added to this benefit of better weaving is the attendant increase in slasher room production, made possible by the fact that the *Moist-O-Graph:*

- *prevents overdrying of yarn, resulting in fewer stoppages*
- *makes possible higher running speed*
- *provides operation records*

Our local Honeywell engineering representative will be glad to give you full details on how this instrument can help improve slasher efficiency in your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Sales and service offices in more than 110 principal cities of the United States.

● **REFERENCE DATA: Write for new Bulletin No. 54-66.**

MINNEAPOLIS
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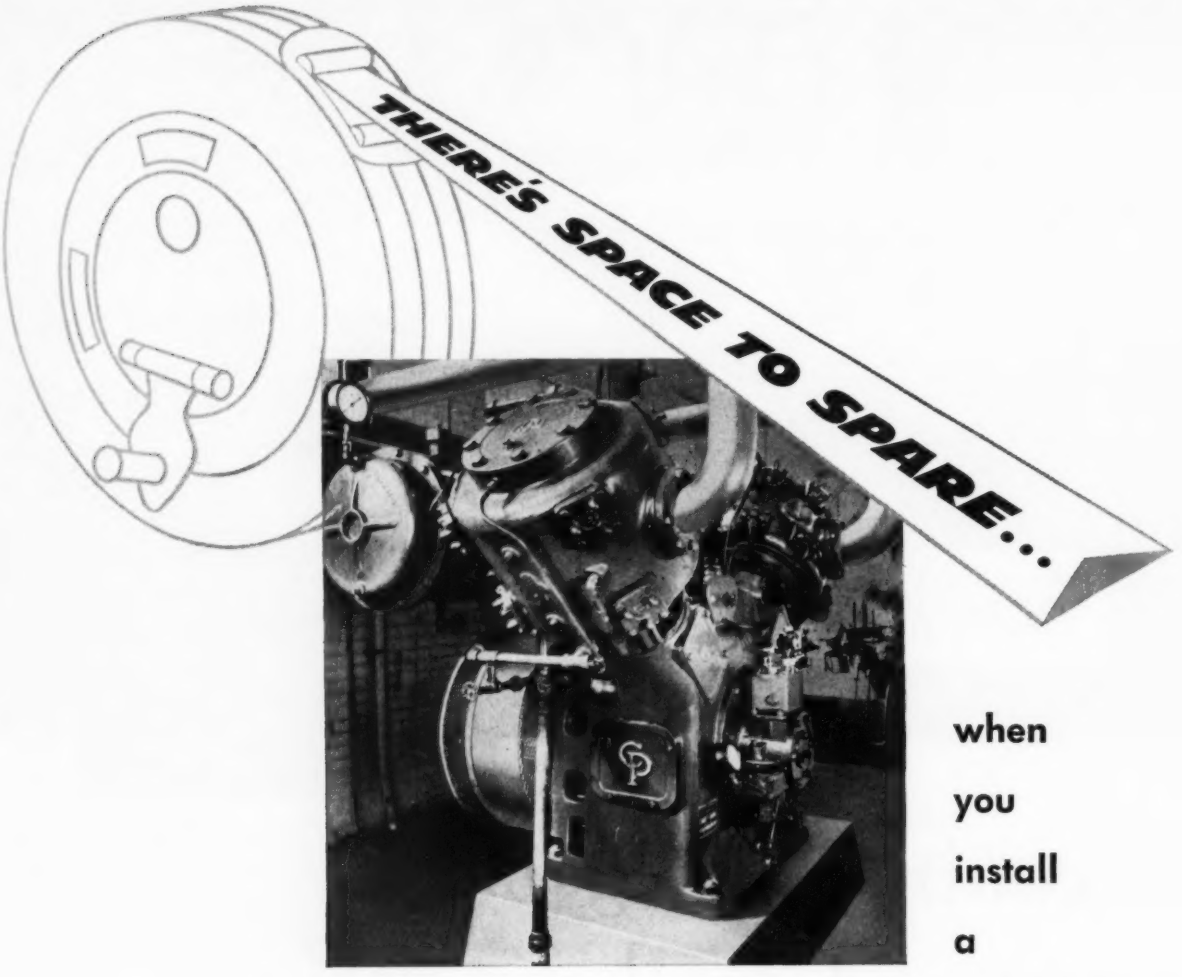
BROWN INSTRUMENTS
First in Controls



when you install a

TYPE Y....

compressor

Where space is limited, industry relies more and more on Chicago Pneumatic's compact, heavy-duty Type Y Compressor. It takes up minimum floor area, yet is ideal for long, continuous heavy duty. Shipped as a complete "package" ready for easy installation, it requires the simplest of foundations—needs no alignment.

The highly efficient Type Y Compressor has roller main bearings, precision connecting rod bearings, multi-step capacity regulation, and an easy-to-clean shell-and-tube intercooler.

Available in sizes from 75 hp to 250 hp, 410 cfm. to 1663 cfm., and with flange mounted, belted and coupled motors. Write for Bulletin 766. *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*

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Make Your Difficult Constructions Easier to Weave With

STA·GEL®

Staley's new high efficiency spun rayon size

N.C.*

*NON-CONGEALING

STA-GEL N.C. offers the fluidity to meet your specific concentration needs

Now you can definitely improve loom efficiency with STA-GEL non-congealing warp sizes for spun rayon and blends! New, improved STA-GEL N.C. is made in a range of fluidities to meet the concentration needs for your particular blend of yarn.

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- Smoother, Tougher Size
- Reduced Shedding
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- Easier Desizing
- More Strength and Binding Power
- Reduced Cost

Join the many important mills now using STA-GEL. Make your difficult constructions easier to weave with Staley's new, better sizing!

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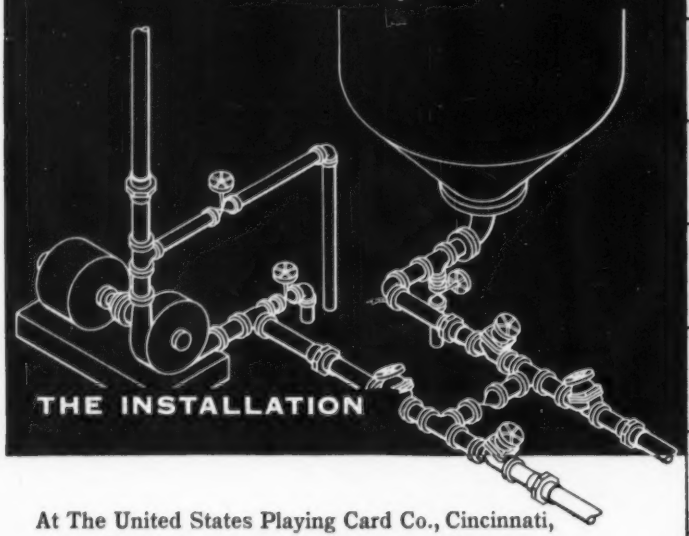
PRODUCTS FROM CORN
Staley's

A. E. Staley Mfg. Company, Decatur, Illinois

What a Difference in Valve Behavior ...on Heavy Coating Liquids

for example



THE INSTALLATION

At The United States Playing Card Co., Cincinnati, using Crane Diaphragm Valves in handling paper coating "enamels" from storage tanks to pumps.

VALVE SERVICE RATINGS

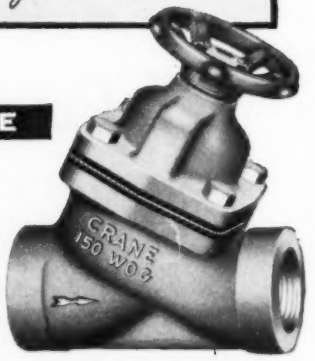
SUITABILITY:	None other like it
FEATURES:	Fluid can't get into bonnet
MAINTENANCE COST:	None
SERVICE LIFE:	No sign of wear after 3 years
OPERATING RESULTS:	Trouble and waste stopped
PRICE:	O.K. — no premium
AVAILABILITY:	Crane Catalog item—No. 1610

THE CASE HISTORY

Previously, ground plug cocks and conventional gate valves were used. During normal shutdowns the heavy coating liquid would build up on seating surfaces, in stem threads and working parts. The cocks and gates would "freeze up"; were hard to operate, couldn't be shut tight. Recurring maintenance, cleaning, and replacements were a costly, annoying problem.

Switching to Crane Diaphragm Valves solved the problem. Their sealed-to-fluid bonnet and soft disc insert did the trick. None of the 48 Crane valves installed beginning more than 3 years ago, has needed service of any kind. They continue to operate freely and easily.

THE VALVE



There are many more ways you can benefit by complete, dependable isolation of fluid and valve working parts. Crane Packless Diaphragm Valves are equally effective under corrosive conditions, and on erosive fluids—sludges, slurries, etc. They also keep your product contamination-free. Choose these valves to your needs from a wide variety of body, disc, disc-insert, diaphragm, and lining materials. See your Crane Catalog or local Crane Representative.

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CROSS yarn is as fine in quality as money, time, long years of experience, and modern methods can produce. So if you want fine quality cotton knitting yarn, spun from Strict Middling (the *only* grade of raw cotton we buy), get CROSS double-carded or combed yarn, bleached or dyed. See what a difference quality makes!

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We will match your shade or you may choose from more than 700 shades now shown in the CROSS color catalog.

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ION

IMMENSE

HOMEFURNISHING,

AMERICA'S LIFE!

THE OBJECTIVES:

The Rayon Information Center has been formed to help you—the textile manufacturer, the converter, the cutter, the retailer. It will devote its great influence and resources toward widening and strengthening your present market. Toward banishing the haze and fog of consumer misunderstanding concerning modern rayon. Toward building a new and informed consumer confidence in one of the most widely used fibers in existence. Toward reaffirming the tremendous advantages this fiber has to offer, in a combination equalled by no other: beauty, economy, versatility, and durability.

THE METHODS:

The Center is launching a vast public relations program throughout the country. This program will eventually blanket not only consumers and store personnel but also schools, women's clubs, fashion editors, independent designers. Better merchandising of rayon will be stimulated by (1) special projects arranged directly through personal contact with cutters and converters to promote new fabrics and new styling and (2) through national consumer and trade advertising and editorial information.

WE BELIEVE

and hope that the Center—serving as a vital core of the rayon industries, as an exchange, as a bank of ideas and information—will give a great fiber its due. Today's rayon is dazzlingly versatile, new as the newest synthetics—and rich in uses and virtues. Let us take a fresh look—and kindle a fresh enthusiasm for the most vitally important man-made fiber on the American scene.

PARTICIPATING COMPANIES:

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In addition, many companies will supplement product listings with detailed information about their products in their advertising space. Such information will be page referenced in the Classified List, thereby giving you a complete story on a product or service.

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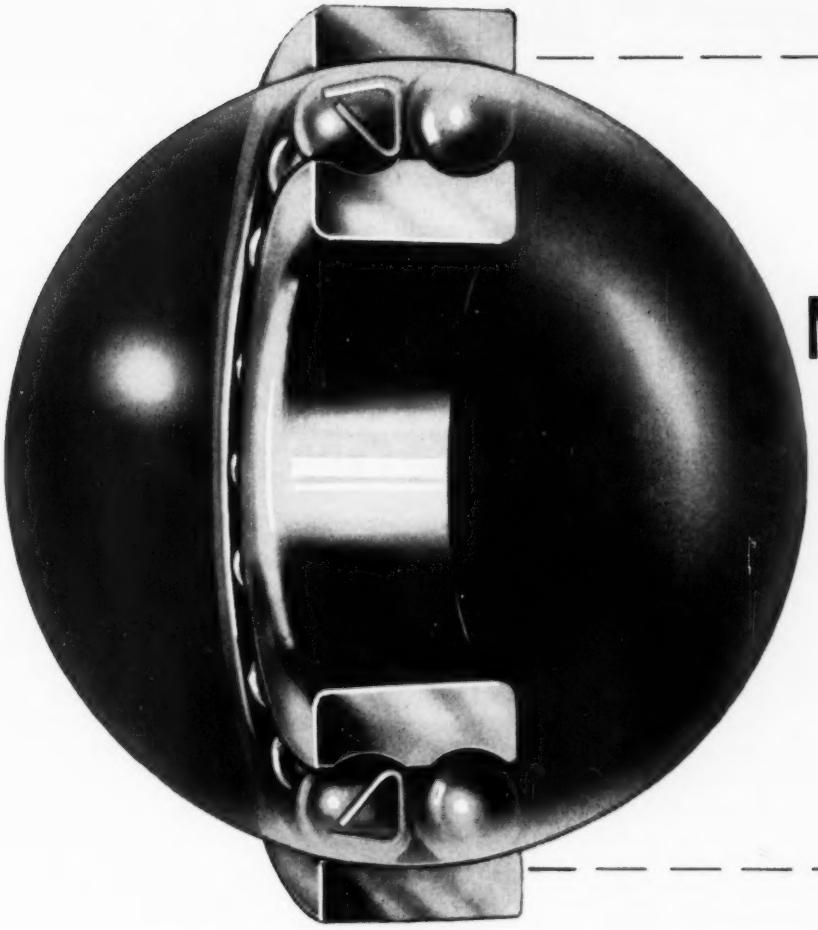


where

MISALIGNMENT

can't be helped . . .

you'll find

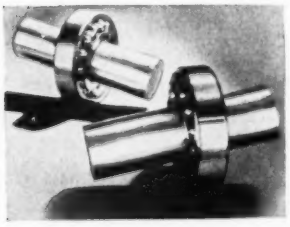
SKF

Self-Aligning

Ball Bearings

See how the raceway of the outer ring of this SKF Self-Aligning Ball Bearing forms the section of a sphere! There's good reason . . .

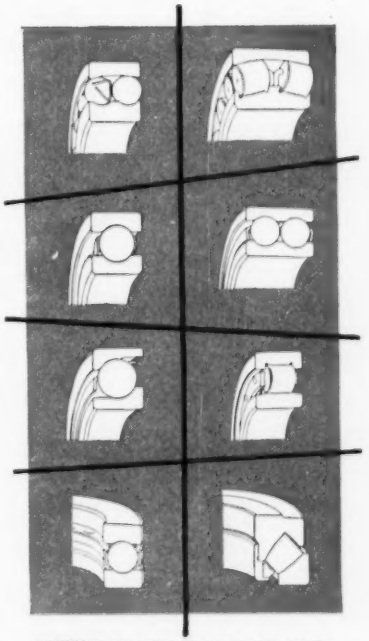
This principle of design compensates for misalignment due to shaft deflection under load, distortion of the foundation, or other causes. (The misalignment shown below is exaggerated for clarity.)



For many years, designers of Textile equipment have specified SKF Self-Aligning Ball Bearings . . . because they compensate for shaft misalignment . . . because they minimize friction, even at high speeds . . . because they deliver top-notch performance with minimum maintenance. SKF *Spherical Roller Bearings* — embodying this same self-aligning design feature — are available for exceptionally heavy loads.

More often than not, one of these SKF self-aligning bearings will be the right one for *your* particular textile application. However, *whatever* your bearing needs, you can rely on SKF for that extra engineering help that *puts the right bearing in the right place.* 7433

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. — *manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*



SKF'S COMPLETE LINE OF ANTI-FRICTION BEARINGS, PLUS **SKF** ENGINEERING CO-OPERATION, HELPS YOU *PUT THE RIGHT BEARING IN THE RIGHT PLACE.*

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RESILIENT STRENGTH . . . In Textile Spring-Beard Needles, a special steel formula and proper tempering assure ideal resilience in high-speed knitting operations. At every step in the process of needle manufacturing, rigid controls — automatic and electronic — protect the performance of your needle bars.

Resilient strength is only one advantage of Textile Spring-Beard Needles . . . actual use will show you others . . . in finer fabrics and lower production costs.

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For Full-Fashioned Knitting
For Tricot Knitting

ARROW Latch Needles

DEPRECIATION

And Its Crucial Economic Role

The sixth annual McGraw-Hill survey of Business' Plans for New Plants and Equipment, just completed, reveals some remarkable facts about the role of depreciation in our economy. To most people, depreciation is a technical term, used by accountants to discuss a dull subject. But it really is a simple matter: It is the amount of money set aside each year by a company to replace plant and equipment that is wearing out. And here are some facts from this survey* which show how depreciation can make the difference between prosperity and recession in the United States:

1. *In 1953, about half of all the money spent on new manufacturing plants and equipment will come from depreciation reserves.* For the future, manufacturing companies are relying even more heavily on this source of money. In the years 1954-56, they count on using their depreciation funds to pay for almost two-thirds of the new plants and equipment now planned.

2. *The amounts of money made available by depreciation allowances vary greatly from industry to industry.* Some industries, such as those producing steel, chemicals and petroleum products, will have relatively large amounts of cash available from their depreciation reserves. In considerable measure, this is because the government is allowing them to accumulate such reserves at an accelerated rate as an encouragement to build facilities required for national defense. But most of the companies engaged in the production of textiles, processed foods and many kinds of machinery have had little chance to benefit by this provision for accelerated depreciation. Hence, they have much less money available from depreciation reserves.

3. *There is a definite shortage of investment funds in the industries that have relatively low depreciation allowances.* Taken together, the coal mining, textile, food processing, machinery and other metal-fabricating industries plan to spend about $4.7 billion for new plant and equipment this year. But they report that they would spend $1.5 billion *more* per year during the period 1954-56 if sufficient funds were available.

4. *Eighty-five per cent of the manufacturing companies covered by the survey reported that they plan to invest all their depreciation funds* to keep equipment up-to-date and to provide capacity for new products and new markets. These companies could let their depreciation funds pile up as idle cash. But the intention is to spend most of them for capital equipment.

*The sixth annual McGraw-Hill survey of Business' Plans for New Plants and Equipment included companies that provide 25 per cent of all industrial employment and 60 per cent of employment in those industries where capital investment is highest. These companies are mostly the larger companies in their respective industries. A copy of the full report of this survey can be obtained by addressing: Department of Economics, McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 36, N. Y.

Hence, there is a direct relationship between the amount of depreciation funds available and the level of capital investment. And it is upon the latter that the level of general prosperity decisively depends. One-third of all industrial workers are engaged in producing or installing such equipment.

This fact that the level of depreciation allowances has a major bearing on the level of capital investment should not surprise anyone. In several foreign countries where these allowances have been increased, investment has boomed. The two nations with the highest ratios of investment to national income are Canada and Norway. Both countries adopted flexible depreciation policies after World War II. In Sweden and The Netherlands also, flexible depreciation allowances have contributed to rapid industrial expansion. Finally, the tremendous investment brought about by our own rapid amortization program shows dramatically the importance of depreciation in stimulating capital expenditures.

Obsolete Tax Laws

In spite of this record, the fact remains that our laws and the business procedures that govern depreciation allowances — in particular the laws and rulings that govern the deduction of depreciation from taxable corporate income — are still based on antique and obsolete accounting concepts which take no account of depreciation's dynamic role in our economy. The internal revenue code still requires most companies to depreciate their equipment over a long period, even though these small annual allowances cannot possibly pay for the investment that is necessary to keep a plant up-to-date under today's rapidly changing technology, with its production of new and improved machinery.

The only allowance made by the government for rapid depreciation is that which is authorized for certain types of plants during the defense emergency. Under this policy most companies are unable to use accelerated depreciation for tax purposes. And as defense projects are completed, the number of new authorizations is dropping. We may lose the chance to utilize fully this powerful tool for sustaining investment because, under our ramshackle emergency tax structure, accelerated depreciation is available only to a minority of firms on a temporary basis.

New Policy Needed

A sensible, up-to-date depreciation policy for tax purposes is long overdue. Either the Treasury must modernize the internal revenue code on its own initiative, or Congress must take the lead by writing into permanent law a flexible depreciation policy applicable to all companies.

Treasury experts now have before them a number of proposals to allow faster depreciation for the average firm. The U.S. Chamber of Commerce has suggested that companies be allowed to deduct from taxable income 25 per cent of the cost of new equipment in the first year, with the remaining cost to be deductible over the life of the facilities. The Machinery and Allied Products Institute has long sponsored a formula that would allow full deduction in two-thirds of the estimated life of the property. In Congress, Chairman Reed of the Joint Committee on Internal Revenue Taxation has stated that we need a more flexible depreciation policy. Senator Frear of Delaware has introduced a bill that would let a business make its own choice on how fast to depreciate its equipment.

It will take time and study to determine which of these various proposals best fits the needs of the economy without sacrificing unduly the revenue needs of the government. If we are to have a new depreciation policy, designed for a long period ahead, it must be carefully worked out. But this much is clear right now: *The development of a flexible depreciation policy on the part of the federal tax authorities is one of the most important steps that can be taken to sustain prosperity. When we talk about depreciation, we are talking about the money that pays for almost two-thirds of the new manufacturing facilities now scheduled for construction. We are talking about the new investment and the new jobs on which our continued prosperity depends.*

McGraw-Hill Publishing Company, Inc.

TEXTILE WORLD
June, 1953 - Vol. 103 - No. 6

PRODUCTION Department Schedules and Controls Orders

▶ The principles of production planning and control are the same for a mill of any size. Here, a small 100-loom synthetic-fiber weaving plant is used to show the operation of a scheduling program. A central staff plans all the production and acts as liaison between the mill and the sales office.

By THOMAS FRIEDL

FOR EFFICIENT OPERATION, production planning should be centralized and scheduling for the entire plant should be directed from this one center. If the individual supervisor is required to plan his own production, he devotes up to 50% of his time to this job—time that could be spent more profitably with machines and personnel. A small staff whose job is to plan, schedule, and expedite production for the entire mill can save supervisors time and also do a more effective job of coordinating production in different departments.

The main duties of a planning staff are:

1. To receive orders from the sales department and arrange and follow up with initial trials
2. To determine and help obtain the necessary quantities of raw material
3. To make sure that the necessary equipment (such as spools, reeds, loom beams, etc.) is available
4. To schedule production so that all orders will be completed on time
5. To fit the orders smoothly into the various processes and make sure that each order is run on the machinery that is best suited for it
6. To follow up production schedules to see that the orders are running according to the timetable and are up to quality standards
7. To keep a constant eye on the entire manufacturing process and expedite any particular item
8. To identify an order at any stage along the line so that hurried changes can be made as needed

Order Comes From Sales Force

Orders usually originate with the sales department and are then passed on to the mill. The planning department works as liaison between the sales department and the plant and can act in a limited way as technical advisers to the sales personnel, who do not always know the manufacturing problems. A lot of trouble can be saved if manufacturing difficulties are explained to the sometimes overeager sales staff in the beginning.

Before the production department makes a commitment for a fabric, it should make sure that the necessary manufacturing procedure is practical. The project should be discussed with the manufacturing staff, particularly if trial runs must be made. If similar constructions have been run successfully, it may be safe to make a commitment without consulting the manufacturing staff. However, if the construction is very different from previous stylings, it may be necessary to make evaluations of yarn preparation, slashing, weaving, and possibly finishing operations. It is important to anticipate the grade of fabric and to forecast machine efficiencies and other

items that influence the cost. Sometimes it is necessary to anticipate shrinkage and consequent loom-width adjustments.

The final manufacturing procedures that are decided on should be clearly written up and distributed, and all details should be clearly noted so that no room is left for doubt or error.

Reports Control Scheduling

Current reports should contain all information that aids in planning. These reports provide a continuous review of plant operations and allow quick changes to be made in the schedules. The most important of these reports are:

Master Schedule

On this schedule, the number of looms on each style is listed for each week for as far into the future as practical. This schedule shows when looms will become vacant and when style changes are called for. The planning staff uses this schedule to keep the sales office informed of possible future commitments.

This schedule is reissued after a major scheduling change or after the current schedule becomes obsolete.

Yarn Stock Report

A complete survey of yarn stocks should be issued weekly.

Fabric-Order Status Report

When an order for a certain yardage is accepted, the yardage and style are entered in a ledger book. Each week the yardage woven and the new balance of outstanding production are marked. The status report is taken from this book.

Loom and Warp Position

The number of looms running on each style is shown against the number of looms scheduled, and the number of warps available is checked against the looms running out. With this quick weekly picture, immediate loom-to-loom scheduling decisions can be made.

Warping Status Report

As warps are made, the yardage is entered in a ledger book and subtracted from the balance outstanding. This book is kept the same way as the fabric-order status book, and the report is taken the same way.

Filling Status Report

The number of looms running on each style and the number of spindles quilling respective filling yarns are reported each week. If the filling reserve runs below advisable limits, the quilling schedule is promptly adjusted.

Fig. 1 -- MASTER SCHEDULE

Cloth style	1	2	3	4	5	6		
Yd. per loom per wk.	420	390	380	400	360	430		
Looms running							**Total**	**Looms vacant**
Jan. 5	20	10	5	5	10	—	50	
Jan. 12	20	10	5	5	10	—	50	
Jan. 19	16	10	5	5	10	4	50	
Jan. 26	14	10	5	5	10	6	50	
Feb. 2	8	10	5	5	10	12	50	
Feb. 9	8	8	4	4	7	19	50	
Feb. 16	6	6	3	4	7	24	50	
Feb. 23	5	6	3	4	7	25	50	
March 1	3	4	1	3	7	32	50	
March 8	3	4	1	3	7	32	50	
March 15	3	4	1	3	7	32	50	
March 22	3	4	1	3	7	32	50	
March 29	3	4	1	3	7	32	50	
April 5	3	4	1	3	7	32	50	
April 12	3	4	1	3	7	32	50	
April 19	3	4	1	3	7	32	50	
April 29	3	4	1	3	7	32	50	
May 3	3	4	1	3	7	32	50	
May 10	3	4	1	3	7	26	44	6
May 17	3	4	1	3	7	14	32	18
May 24	3	4	1	3	7	9	27	23
May 31	2	4	—	3	7	6	22	28

THIS SCHEDULE shows the loom assignment for each style. By referring to the "Looms vacant" column, the planning department keeps the sales office informed of future production capacity. A 200,000-yd. order for Style 6 was accepted on Dec. 1 for completion by the end of May on the basis of loom availability. The actual weaving started the week of Jan. 19, and looms mounted each week were worked in with the production schedules on the other styles.

Fig. 2 -- YARN STOCK REPORT

Yarn	100/40/3S Dull viscose	100/40/3S Dull acetate	150/40/2Z Dull acetate
Lot number	2643	2893	1901
Order number	4622	3419	4819
Balance on hand	4,000 lb.	3,000 lb.	10,000 lb.
Weight ordered	8,000 lb.	9,000 lb.	11,500 lb.
Expected delivery	two weeks	two weeks	gradual

A REPORT of yarn stock is made every week to make sure that enough is on hand for the scheduled production. This report shows the results of the survey of the yarn needed for Style 6. Sufficient yarn was ordered to bring the stock up to the required amount.

How the Planning Department Works

For an example of production planning, we will take a mill weaving filament-rayon fabrics. This mill has a total of 100 looms (50 1x1 automatic bobbin-changing and 50 2x1 shuttle-changing looms), one high-speed warper, one slasher, 350 quilling spindles, and suitable twisting capacity. The cloth is commission dyed and finished. Ten styles are currently running in the mill. (On the Master Schedule given here, the five styles running on shuttle-changing looms are not shown.)

On Dec. 1, an order is accepted for 200,000 yd. of viscose-and-acetate taffeta to be completed by the end of May. The requirements are:

Fig. 3 -- FABRIC ORDER STATUS REPORT

Style No. 11 Order No. 678	Construction on loom Ends Picks Width 110 X 68 X 46
Total yards ordered 200,000	Yd. per loom per week at 85% efficiency = 429.6 yd.

Date	Yards to be woven	Yards shipped	Balance to weave
Dec. 10	200,000	—	200,000
Jan. 19	200,000	1,500	198,500
Jan. 26	198,500	2,500	196,000
Feb. 2	196,000	5,000	191,000
Feb. 9	191,000	8,000	183,000
	183,000	—	—

THIS REPORT is taken from the fabric-order ledger book. The new balance is obtained by subtracting the yardage marked on the cut tickets from the old yardage to be woven. Subtract the total of yards shipped and yards to be woven from the total yardage (200,000) to get the yardage ready to be shipped.

Fig. 4 -- LOOM AND WARP POSITION REPORT

Week ending: Feb. 9

Style No. 6	
Construction (ends, picks, width)	110X68X46
Warp	100/40/dull acetate 100/40/dull viscose
Filling	150/40/dull acetate
Looms (mounted/scheduled)	16/19
Looms running out in five days	2
Old warps to tie	1
New warps drawn	3
Yards on slasher	20,000
Yards on warper	20,000
Remarks	Sufficient warp reserve to keep looms running. Start three new looms as soon as looms become vacant.

A QUICK PICTURE of the production situation is available from this report. The report shows if enough warps are available for the looms running out and if the warper and slasher rooms are on schedule. If the looms mounted continue to be lower than looms scheduled, a schedule change will be necessary.

Fig. 5 -- WARPING STATUS REPORT

Style No. 6 Warp 100/40/3S dull acetate
100/40/3S dull viscose
Warping, one-and-one

Date	Yards warped	Yardage outstanding	Remarks
Dec. 1		200,000	Order received
Dec. 29	20,000	180,000	Two more sets to be warped next month
Jan. 5	40,000	140,000	
Jan. 12		140,000	
Jan. 19		140,000	
Jan. 26		140,000	
Feb. 2	20,000	120,000	
Feb. 9	20,000	100,000	

YARDS WARPED are entered in a ledger book as reported by the warping room. The warping room follows a schedule set up by the planning department, and this weekly report shows if the warping is being done on schedule. Yards outstanding reflect the total yardage warped.

Fig. 6 -- FILLING STATUS REPORT

Week ending: Feb. 9

Type of yarn	150/40/2Z dull acetate
Style No.	11
Weekly requirement	900 lb.
Looms running	
This week	19
Next week	24
Spindles required	60
Weight in stock on quills	200
Remarks	Step up production to accommodate next week's increase in number of looms; 75 spindles will be required.

ADEQUATE FILLING is insured by this weekly filling-status report. The weekly requirement and spindles assigned to the filling order will be stepped up to conform with the increase in looms mounted. The quilling department plans its long-range schedule by referring to the master schedule.

Warp alternates end and end

100/40/3S dull viscose
100/40/3S dull acetate

Construction in loom

Ends per inch 110
Picks per inch 68
Reed 55/2
Width in loom 46 in.
Width off loom 45⅛ in.

Construction off loom

Ends per inch off loom 112.5
Picks per inch off loom 68

Total ends and warp requirements

100/40/3S dull viscose 2,530 ends = 56.6 lb. per 1,000 yd. of fabric + 5%* = 59.4 lb.

100/40/3S dull acetate 2,530 ends = 56.6 lb. + 5%* = 59.4 lb.

*Warp waste allowance per 1,000 yd. of fabric

Filling requirements

150/40/2Z dull acetate 105 lb. per 1,000 yd. of fabric

Loom speed

Average loom efficiency 85% at 172 ppm.

(*Continued on page 214*)

THIS SIGN helps quality awareness by reminding the workers at Madison that the final judgment of yarn quality comes after the yarn leaves the plant. Signs with quality points to watch are also hung in each department. Madison feels that constant and repeated appeals to the pride of the operators will be reflected in better quality work and satisfied customers.

THE TRAINEE spends at least three weeks in the training room before she gets an assignment. Each trainee is checked every day during the six-weeks training period for quality, equipment, and standard procedures.

Madison Controls NYLON THROWING With Tests, Inspections, Operator Training

HIGHLIGHTS: Operators checked every day during a six-weeks training period and every two months after training—Plant inspected every week—Spindles checked with stroboscope once a week—Periodic twist checks made—Titration report helps to locate sizing troubles

By **THOMAS B. WINSTON,** Assistant Editor, TEXTILE WORLD

QUALITY AT Madison Throwing Co., Madison, N. C., is maintained by properly trained operators and adequate testing and inspection schedules. Quality control is so important that it starts with the hiring interviews. Robert F. Leh, who runs the quality-control program, also interviews prospective employees and supervises operator training.

During the first interview Mr. Leh tells the prospective employee about the company, the plant organization, and the complaint procedure and explains the fundamentals of commission nylon throwing—where the yarn comes from, what Madison does to it, and where it goes when Madison is through with it.

Next, Mr. Leh explains the safety requirements (no jewelry, etc.), job security (reputation of company, insurance benefits, etc.), employee opportunity (earnings, potentials, chances for promotion), the training program, the function of timestudy and why it is necessary, and the importance of quality control.

When a job becomes available, five or six of the best candidates are recommended to the job foreman, and he makes the final choice from those candidates.

Training Period Lasts Six Weeks

The training period at Madison is six weeks. An operator spends a minimum of three weeks in the training room before she is given an assignment. The basic training is done by steps. For example, the coning trainee might spend her first two or three days learning to tie a knot. Lacing up

SKILLED OPERATORS are the backbone that makes routine tests and inspections effective. After training, every operator at Madison is checked at least every two months with the same checklist that is used for the trainees.

SPINDLES ARE CHECKED with a Strobotac once a week by the fixers. The fixers check corks at the same time and make a weekly report of spindles and spindle pots discarded and defective conditions remedied.

SIZE TITRATIONS are made on the first shift, but samples are taken from all three shifts. One specific spindle per trough is sampled each day; so every spindle is checked once a week.

might take two more days, and then the operator laces up and ties knots for a day. She learns to place the knots on top of the cone and to start and stop the spindles. Then all four operations are combined. Usually, it takes about 10 days for an operator to be told all the coning steps.

The trainee is checked by a standard checklist every day during the six-weeks training period for equipment, quality, and standard procedure. Two lines of boxes for percent of assignment and ends down give a quick over-all picture of the trainee's progress.

For each checkpoint, tension for instance, X is marked in the box if the trainee is doing the job incorrectly. If X's appear for any item on three consecutive days, the trainee is brought back into the training room for another session. The trainee is also given extra training if she doesn't check out in the six-weeks period. (In the past two years, only one operator has been given additional training.) If three more consecutive X's should be recorded for the same checkpoint, the operator is considered to be on the wrong job.

Inspection Covers Everything

Operators

Every operator is checked at least every two months by the same checklist that is used during the training period. In this way, old operators are kept to the standard procedures.

Plant Tour

Once a week, every machine and every end in each department is checked by Mr. Leh on a plant tour. This inspection is an effective counterbalance to the individual-operator check. Anything that is not within standards is reported on the inspection form for processing difficulties. On this tour, plant housekeeping, safety, and morale are also checked.

In addition to this tour, periodic inspections for cuts, worn parts, etc., are made by the fixers.

Stroboscope Checks

The fixers check every spindle once a week with a Strobotac. Corks are inspected at the same time. A sheet with four columns of 58 lines takes care of each uptwister. At the end of the week, a report is made of the total spindles in each department, spindles checked with the Strobotac, spindles discarded, spindle pots discarded, and defective conditions found and remedied—dry spindles; waste on spindles; loose, wobbly, or small-hole bobbins; loose springs; and miscellaneous corrections.

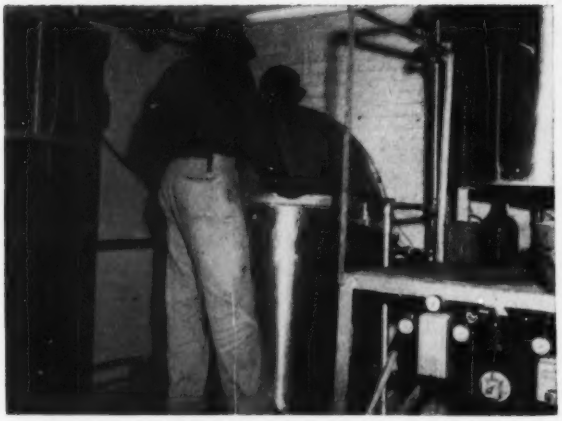
The spindles on new machines are checked as they are put into operation, and the spindles on all machines are checked after cleaning or repairing. (Oiling and cleaning are done on a six-weeks schedule.)

Air Conditioning

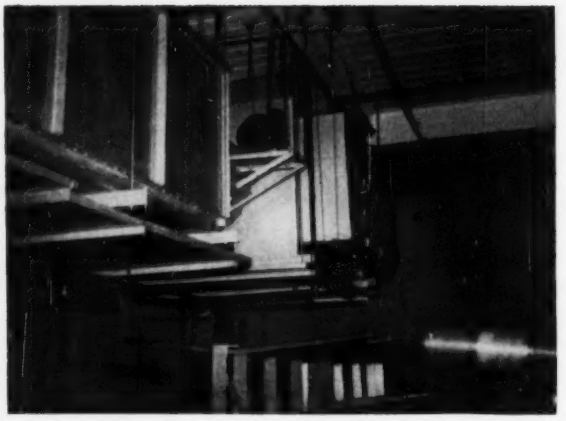
The two air-conditioning units are under the supervision of the plant engineer, and he watches their operation carefully to keep the relative humidity and temperature at the levels preferred by Madison. The maintenance of proper air conditions is essential.

(*Please turn the page*)

Madison Controls Nylon Throwing *(Continued)*



SIZE IS MIXED in a room on the second floor. Besides the mixer, the room has stainless-steel storage tanks and a water-softening tank. Seven separate feed systems supply the 18 sizing machines and make flexible lot assignment possible.



AIR CONDITIONING is essential to nylon throwing. Besides this overhead installation, Madison has another unit in a separate room. The master mechanic makes sure the correct relative humidity and temperature are maintained.

A FINAL INSPECTION is made for soiling, defects, specification, and density of the cone. George Watkins, department superintendent, makes sure that Lucile Mabe's judgment agrees with the densometer reading. Specification slips are put in here.

QUALITY CONTROL is the responsibility of Robert F. Leh (left). He discusses the results of this weekly plant inspection with C. T. Southerland, general manager. He keeps in touch with the laboratory with a two-way communications system.

Laboratory Tests Supplement Inspection

Twist Check

Twist checks are made following gear changes, and periodic checks are made for all machines. Denier checks are also made by the lab.

Oil Check

The amount of oil in the knitting yarn is determined by the extraction method (ether evaporation). Every lot of yarn and every coning line are checked once a week.

Size Check

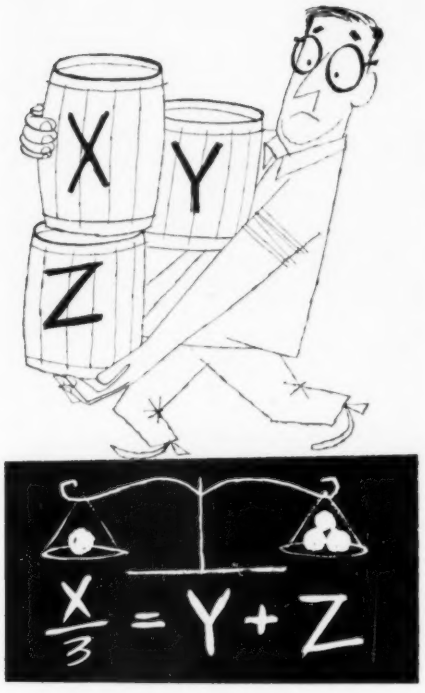
In the sizing department, Madison has six spindles per trough, and a sample is taken from one spindle per trough each day. By checking the spindles according to their sequence of position, the six spindles rotate from Monday to Saturday. This simple schedule insures that each spindle is checked once a week. Each shift samples six machines; so the tests show around-the-clock performance (the laboratory technician works only on the first shift). The size is checked by titration.

Madison mixes its size in a room equipped with a stainless-steel mixer, storage tanks, and a water-softening tank. Seven different feed systems supply the size machines and allow Madison to run a variable number of machines to a feed system, to run several size formulas at the same time, and to run the same size on machines in different parts of the room.

The daily titration report at Madison carries enough information to trace any sizing trouble to its source. The report is divided into two sections: data for the sizing machines and data for the size feed systems.

For each machine, the lot number, denier and twist, take-up tube, thread speed, and roll speed are listed; and the titration results for the four troughs are marked for each machine. Then the four titrations are averaged, and this figure is entered in its box. Under this box, the titration specification limits are listed so that the size test can be quickly checked against the specification. The last listing for each machine is the numbers of the feed system supplying the size.

(*Continued on page* 258)



Check These Factors

✓Initial cost vs. use cost

A low-cost-per-pound product might be a poorer money value, when results are considered, than a more expensive product.

✓Duplications in inventory

All stiffening agents stiffen, all rewetting agents rewet; but some products are more efficient than others. In some cases, several different materials from the same group are used to do the same job when perhaps one would work.

✓Compatibility and stability

Are your mixes separating? Check your finishing materials for stability to the physical conditions to which they are exposed, both singly and in combination with each other.

✓Optimum quantities

All softeners and rewetting agents have a maximum effective concentration, beyond which their efficiency levels off.

✓Balance: firmness vs. softness

Most finishing materials are a combination of bodying and softening agents. When you get too firm a finish, do you add a softener and then on the next run find more body necessary? Try the opposite approach. Perhaps you can remove something, save on costs, reduce shade change, and get more-uniform goods.

Look At Your COTTON-FINISHING FORMULAS

▶ Too many items on the inventory list may mean that you have too many variables in your size formulas

▶ Here's a check-off list that can help you to recognize where you may be needlessly complicating your job—and losing money

By C. NORRIS RABOLD, Consulting Editor, TEXTILE WORLD

FOR MANY YEARS, the wet processing of cotton textiles has often been referred to as an art rather than a science. Much has depended upon the individual skills and knowledge of the bleacher, dyer, printer, and finisher.

Today, wet processing has become increasingly scientific. The principles of bleaching, dyeing, and printing have been established. The chemical reactions involved have been studied. A great deal of information has been written and published so that most of the operations in bleaching, dyeing, and printing have been reduced to scientific reactions and methods.

The wet finishing of cotton textiles, in spite of all the scientific study that has been devoted to it, is still pretty much of an art; satisfactory results still depend largely upon the finisher's use of his materials and equipment, based upon his individual knowledge.

Finishes are applied to cottons for a variety of reasons. Some of these are:

1. To impart water repellency
2. To give the fabric mildew and fire resistance
3. To stabilize shrinkage, mechanically or chemically
4. To impart wrinkle resistance
5. To adjust finished weight to specific requirements
6. To create hand and appearance

Most cotton fabrics finished today are treated with nondurable additive materials so that the feel and appearance may be more attractive to the consumer. In spite of the years of experience behind us, this type of finishing is still pretty much rule-of-thumb, depending upon the finisher's skill and ability to manipulate his materials.

Finishing may always remain an art because of the vast variety of fabrics and shades processed, the hand and appearance desired, and problems that arise from different types of processing equipment.

(*Continued on page 260*)

ONE INSTRUCTOR trains 11 men at once. Each trainee runs one loom with a warp in it and keeps an empty loom running opposite the warped loom. The trainee is always busy.

HENDERSON COTTON MILLS, Henderson, N. C., is training 11 men with no textile experience to become loomfixers on 224 40-in. X-2 looms now being installed.

The men were carefully screened for qualifications that make good employees:

1. The regularity with which they attended work on their previous jobs
2. What their former employers thought of them as employees
3. The condition of their health; each prospective employee was given a thorough physical examination

The First Step Is Training With Weavers

The trainees selected were placed with experienced weavers on E-model looms and given three to six weeks of training as weavers.

When the first trainee finished his weaver's training, he was placed with a loomfixer instructor in a new weave room. The instructor is an experi-

INDIVIDUAL INSTRUCTIONS on all basic loom motions are given to each trainee. This Bartlett let-off has just been torn down and is being reset to Draper specifications.

PROGRESS IS RAPID because each trainee moves from one loom motion to another as soon as he grasps the purpose of each motion. Here the instructor explains the transfer functions.

enced loomfixer removed from a job as shift foreman to do the special instructing job.

The trainee was given several days of individual instructions on seven major loom motions. The instructor tore down each loom motion several times, rebuilt it, and explained its function while the trainee looked on. Then the trainee did the jobs under the direction of the instructor.

After the trainee grasped the fundamental principles of each motion, he was given one loom with a warp in it and an empty loom to work on while the other loom was running.

Once each week the warp is changed from the warped-up loom to the empty loom to give the trainees experience as warp men.

Each Trainee Receives Individual Instruction

When the first trainee was assigned to two looms, a second trainee finished his training as a weaver and followed the loomfixer-training program laid out for the first man. A third man came along behind him, and so on.

Eleven men have now finished the basic training program, and each of them is assigned to two looms. The instructor works among all of them to check the accuracy of their loom settings and the quality of their woven cloth.

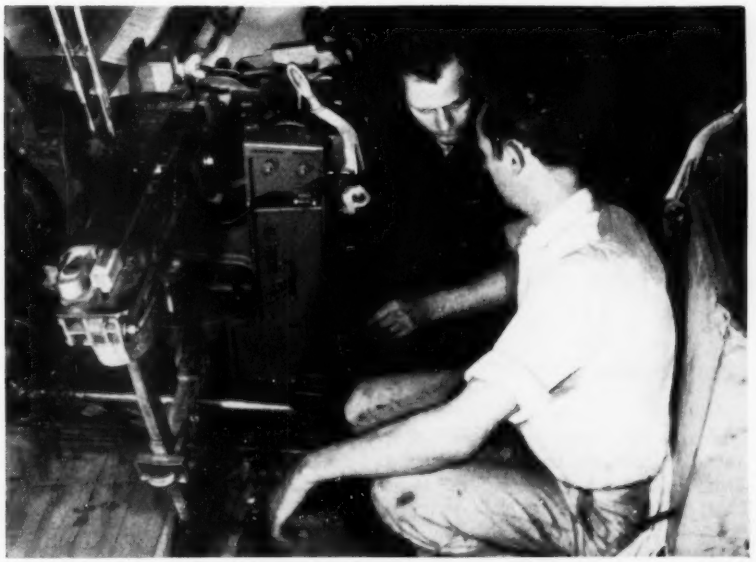
Each afternoon after the trainees leave the job (all training is done on the first shift), the instructor sets a motion of the loom with cloth in it so that a cloth defect will appear when the loom is started the next morning. This practice gives on-the-job training to the men because it simulates actual weave-room conditions.

Two constructions of cotton cloth are being woven to train the loomfixers: 48x44, 40-in. wide, 3.75 lb. per linear yard; and 44x40, 40-in. wide, 4.25 lb. per linear yard.

Special features of the X-2 looms are: aluminum lays, Diehl drives, roll-top harness motions, and Bartlett let-offs. They're being run at 192 ppm.

Only 75% of the candidates for jobs as loomfixers have been able to complete the training to date. One-fourth of the selected trainees did not show the mechanical ability considered by the mill to be necessary to make first-class loomfixers.

The instructor became able to judge loomfixing ability soon after the training program was started. After a man failed both in speed and in the ability to rebuild the first two motions in the average time required by other trainees, he was transferred to other work in the general expansion program at the mill.



TRAINEES ARE TAUGHT to make settings on a loom weaving cloth as soon as they learn the basic settings on empty looms. Settings on the worm take-up motion are being made here.

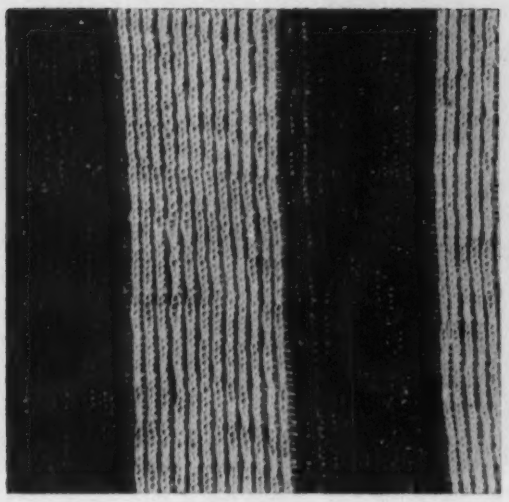
Training Will Continue For a Two-Year Period

When yarns become available from the new cards and spinning frames being placed in the mill, loomfixer trainees will be given a third of a section, then a half, and finally a full section of 90 looms. One X-2 loom section will include some E-model looms to make the section workloads equal.

The total loomfixer-training program will extend over a period of about five months before the weave room is in full operation.

An on-the-job loomfixer instructor will be placed on each shift for a two-year period to further train the young loomfixers.

Henderson Mills estimates that it will cost $3,000 per loomfixer to train men from scratch until they are competent enough to run a job by themselves at Henderson's high quality standard.



VERTICAL COLORED STRIPE is made with this arrangement of the needles. The top line represents dial-needle set-out, and bottom line represents cylinder needles.

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. L S . S . S . S . S . S . S . S . S . S . S L . L .
L S L S L S L S L S L S L S L S L S L S L S L S L S L
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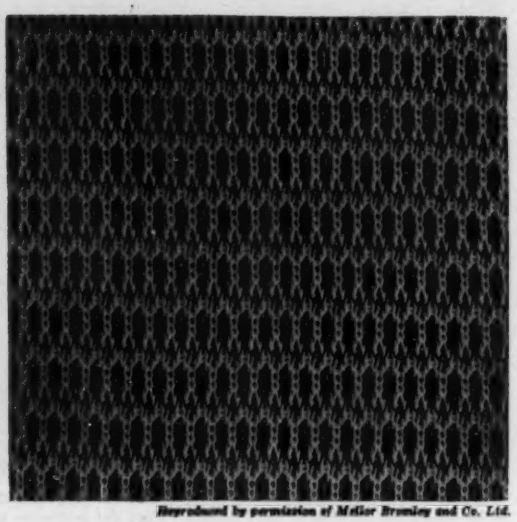
S = Short needle L = Long needle . = Empty slot

The odd feeds are gray yarn, and the even feeds are green yarn.



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BIRD'S-EYE EFFECT is made with the needles arranged conventionally and the cams and yarn feeds arranged as follows:

Feed number	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Dial cam	K	T	K	T	K	K	T	K	T	K	K	K	K	K
Yarn color	W	B	W	B	W	B	W	B	W	W	B	W	W	B

K = Knit T = Tuck W = White B = Blue

Interlock Novelties Can Be Made

- The qualities of interlock fabrics are now recognized for purposes other than underwear
- Because of its double cam systems, the interlock machine can be set up to produce many different types of cloth
- Patterns are obtained by removing needles, using different yarns, or changing dial-clearing cams

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

INTERLOCK FABRICS are being used in increasing numbers for outerwear. Machine builders have recognized this fact and have equipped their machines with attachments to knit many different patterns. This article deals only with machines having movable dial-clearing cams.

Some machines have cams that swing back to the tuck position, and other machines are fitted with cams that swing back to the welt position. Several types of machines allow the cams to swing back at certain intervals determined by a pattern chain made up of different-height links.

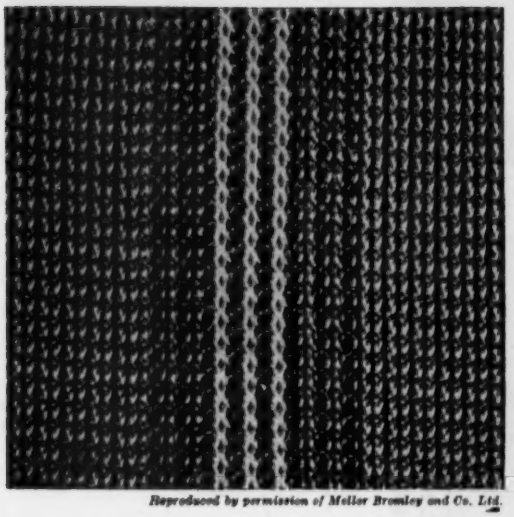
Three Ways To Make Novelties

Patterns are obtained by using one or a combination of the following procedures:

1. Removing needles from the dial, from the cylinder, or from the dial and cylinder produces vertical lines in the cloth. It is not advisable to leave out too many adjacent dial and cylinder needles. The change in the angle of yarn feed to the needles may cause drop stitches. This fault can sometimes be remedied by placing more tension on the yarn.

2. Threading up different colors of yarn or using yarns of different fibers produces narrow vertical and horizontal stripes.

3. Swinging certain dial-clearing



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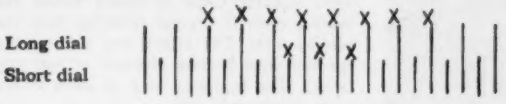
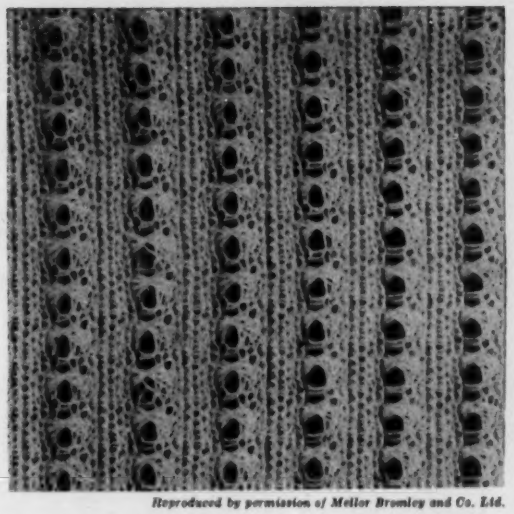
BROAD PANELS of navy and white stripes on a mottled background can be made with this setup:



X = Low-butt needle

Feed No. 1 — Long needle section — blue yarn
Feed No. 2 — Short needle section — white yarn
Feed No. 3 — Long needle section — white yarn
Feed No. 4 — Short needle section — blue yarn



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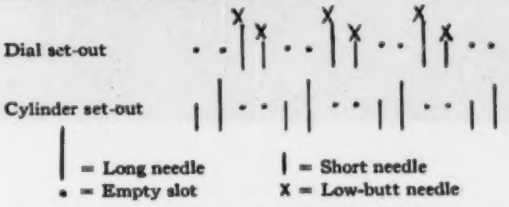
OPENWORK EFFECTS can be obtained by arranging the needles and cams in this manner:



Dial feeds from 1 to 8 tuck, and feeds 9 to 12 knit.

Into KNITTED OUTERWEAR

cams back to their tuck or welt position produces all-over effects or horizontal stripes. If more than four consecutive cams are swung back to the tuck position, the fabric on alternate needles tends to load up. A longer length of stitch on the feeds preceding the tuck feeds reduces the chance of breakouts.

Novelties Have Drawbacks

Tuck-stitch fabrics are heavier than plain interlocks if no needles are removed. Yardage production is less for tuck fabrics than for plain interlock fabrics. The machine may have to run more slowly to make certain novelty cloths successfully.

Cross-tuck fabric makes an excellent cloth for sport shirts and children's wear. Cross tuck, which is firmer and more run-resistant than plain interlock, is made by swinging every third dial-clearing cam back to the tuck position. Heather effects can be made by threading up the first feed with white yarn, the second feed with blue yarn, and the third feed with gray or brown yarn.

Vertical stripes of any width are made by leaving out needles in the dial and threading up different colors on alternate feeds. All cylinder needles knit, and blocks of long dial needles alternate with blocks of short dial needles so that the inside of the cloth is used as the face.

How the Split Cam Works

Panel or split cams are used in place of the standard dial-clearing cams to produce vertical stripes of color or tuck-stitch effects. High- and low-butt needles are required to work with the split cams.

The clearing cam is in two sections. When the lower half of the cam is in action, high- and low-butt needles knit. If the lower cam is swung back to its tuck positon, the high-butt needles knit while the low-butt needles tuck. If both sections are swung back, all needles tuck at that feed.

Machines having a high number of feeds have a greater pattern scope. Vertical colored stripes of many combinations are made on 12-feed machines by fitting alternate feeds with different colors.

As most patterning is done on the dial needles, the best effect is often obtained when the cloth is turned inside out.

COPPER STRIPS around doors and panels improve the electrical contact and reduce radio radiation escaping from a metallic heater cabinet. Metallic heater cabinets are recommended as replacements for nonmetallic cabinets on old equipment.

THIS SCREEN CAGE is closed during the heating cycle to prevent radiation from the heating units. The screen also protects the operator from heating elements of high potential. This heater is used to warm frozen bales of unsorted wool.

June 30 Is Deadline for Shielding RADIO-FREQUENCY HEATERS

If you have a radio-frequency heater that was made before July 1, 1947, you have to meet FCC radiation requirements by the end of this month. Three ways to reduce radiation are:

- **Filters**
- **Metallic cabinets**
- **Screens around heating element**

By OTTMAR NOESKE
Electronics Section, Allis-Chalmers Mfg. Co.

RADIO-FREQUENCY HEATING EQUIPMENT is used in the textile industry in twist setting, preheating frozen bales of wool, and drying and curing processes. Signals from this electronic equipment can be picked up by Federal Communications Commission monitoring stations if the equipment is not shielded. (Signals from Detroit have been picked up on the West Coast.)

These signals make it difficult for the FCC to monitor unauthorized radio communications; so in 1947, the FCC issued Regulation No. 18, which requires certification of all industrial radio-frequency heating equipment. Heaters built since July 1, 1947, are precertified, but the users of older equipment must have their equipment certified by June 30, 1953.

FCC regulations allow an industrial electronic heater to operate without a radio-station license if: (1) the operating frequency is held within a specified frequency band set aside for industrial use or (2) the apparatus can be shielded so that the maximum radiation at any frequency does not exceed 10 microvolts per meter measured 12 ft. above the ground and one mile from the installation. The regulations also specify that signals radiating from a power line must not be stronger than 10 microvolts per meter measured 50 ft. from the power line and one mile from the installation.

How To Meet the Specifications

The design of the equipment for a textile application rules out, in most cases, the possibility of operating within the designated frequency band; so in the majority of cases, the equipment must be shielded to conform with the radiation requirements.

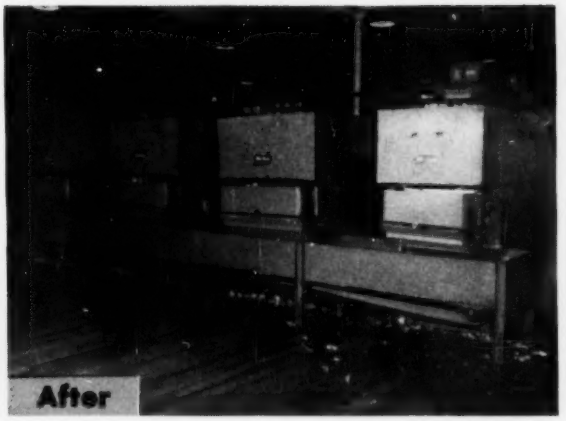
In general, electronic radiation might be broken down into three categories:

1. Radiation from within the heater
2. Radiation from remote electrodes and connective circuits
3. Radiation from power lines carrying radio signals picked up from the input to the equipment

Radiation from power lines is in most cases the easiest to control. At present, many manufacturers are taking care of this problem with a filter network within the heater cubicle. This filter can be fabricated easily from

(Continued on page 194)

BALE BREAKERS and Kitson and Fearnaught pickers made up the opening line. Weighing for blending was done on the scale at the left, and the opened stock was stored in open bins shown in the background of the photo.



FIBER METERS now do better blending, and automatically. There are two four-unit lines and one five-unit line, including a waste unit in each line. Each scale pan can be set to drop 8 to 30 oz. Hoppers are fed directly from bales between opening lines.

Before and After

A $2½-Million Modernization Program In a SPUN-RAYON Mill

By JAMES H. KENNEDY, Southern Editor, TEXTILE WORLD

JUST A YEAR AND A HALF AGO the Simpsonville, S. C., plant of Woodside Mills started to upgrade the line of simple spun-rayon fabrics that it had been making since 1939. Now, after a $2½-million expansion and modernization program, this plant is making high-quality spun-rayon sheen gabardines, drapery materials, and other fancy fabrics.

Throughout the modernization program, the labor force has been kept approximately the same—600 employees. Management thinking was to make better fabrics and improve the mill's competitive position, not just reduce costs on the same fabrics.

Machinery improvement was initiated when employee training in the changeover from cottons was ready for it. As William H. Beattie, president of Woodside Mills, put it, "When we had come as far as we could with the existing machinery, we installed new machinery and continued the progress our employees had made in their training to handle rayon fabrics."

One new machinery installation in the card room posed a problem—no room. Even elimination of the speeders didn't help, but with a 90° shift in direction, room was created for 14-in. cans and handling was reduced.

About 12,800 sq. ft. of floor space was added in a two-story wing that has the new cards on the second floor and the new preparation department on the first floor. Another 8,200 sq. ft. was added to the weave room to accommodate the new looms.

Many changes were also made in the cloth room, and the new setup will be covered in a future issue of TEXTILE WORLD.

In addition, the entire mill was air conditioned, except for the warp-preparation and slasher rooms.

J. L. Edwards is superintendent of the Simpsonville plant.

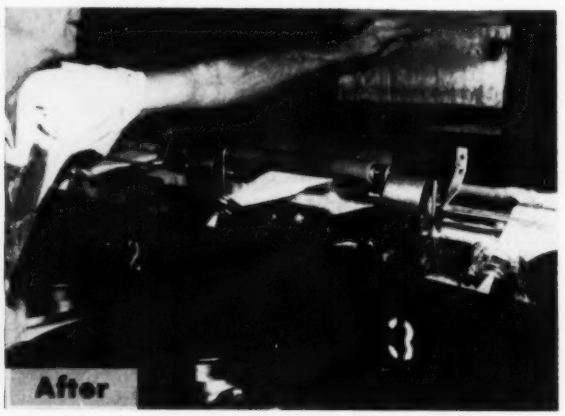
These before-and-after pictures show some of the machinery changes that have taken place at Simpsonville.

Turn the page for more details on . . .

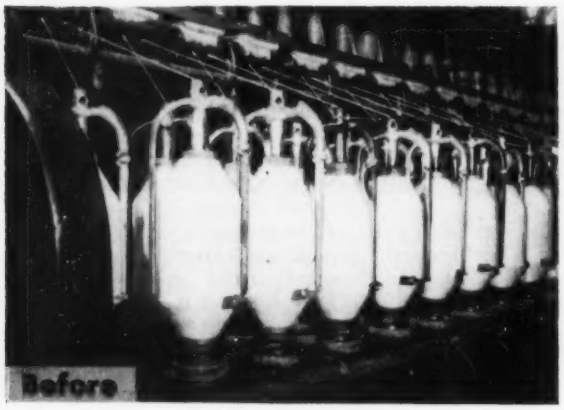
FEED TABLES behind the pickers were hand filled. Opened stock was trucked from bins to a tinting hopper in another room, then back to the picker.

TINTING MACHINE is now set in the line between the Fiber Meters and the pickers. Pickers have been equipped with pneumatic let-offs, and air filters have eliminated the dust room.

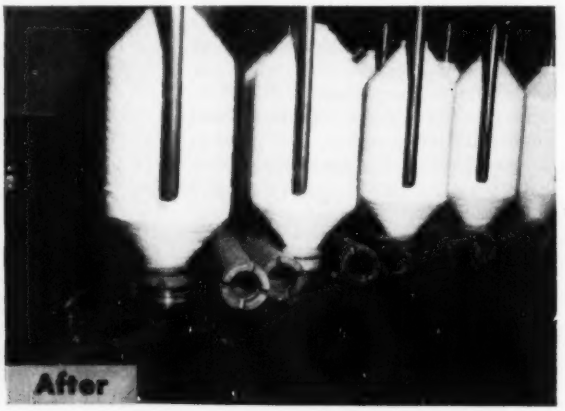
FOUR-ROLL DRAWING with 12-in. cans was the old setup. Two processes of drawing were accomplished in this equipment. The new machinery is also arranged in two lines.



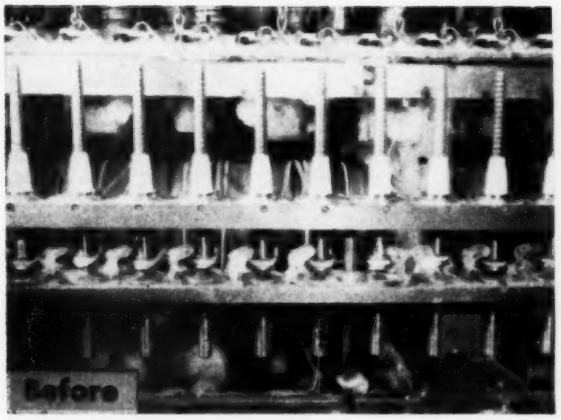
THREE-OVER-FOUR drawing now used gives a much evener sliver than was obtained by the old method and even improves card-sliver unevenness.



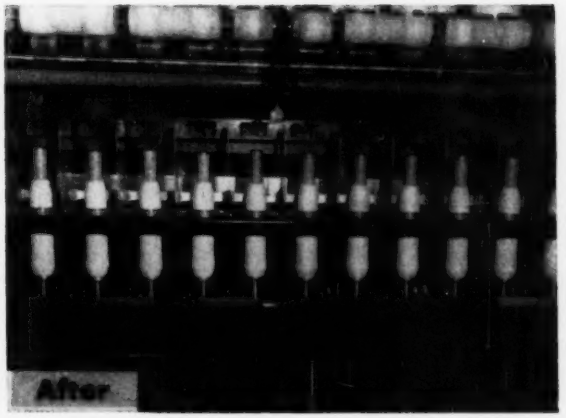
COMPLETELY ELIMINATED were these 8x3½ speeders that were creeled with interdraft bobbins. The old spinning needed 4.10-hk. roving.



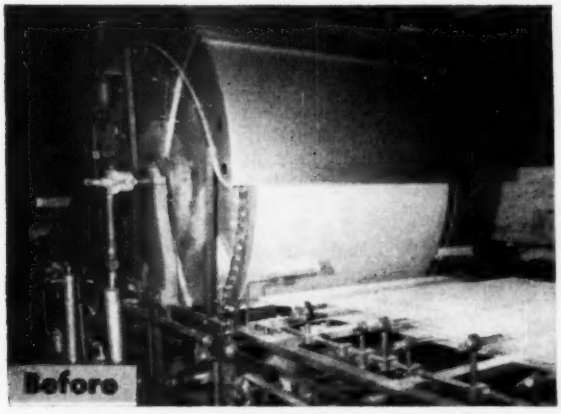
INTERDRAFT frames, 12 of them, now furnish all the roving that is necessary to keep the long-draft spinning running on 1.20-hk. roving under the new system.



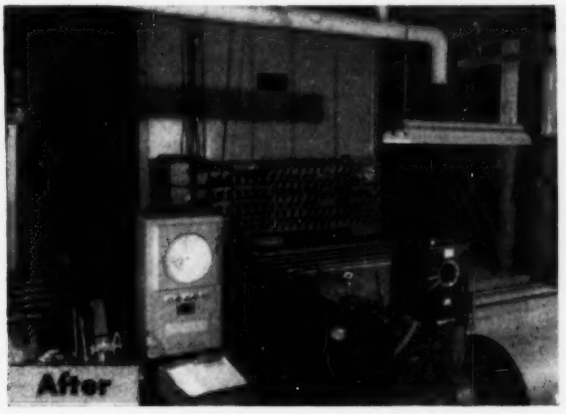
MASON SPINNING formerly made 0.19-lb. warp bobbins and 0.08-lb. filling bobbins.



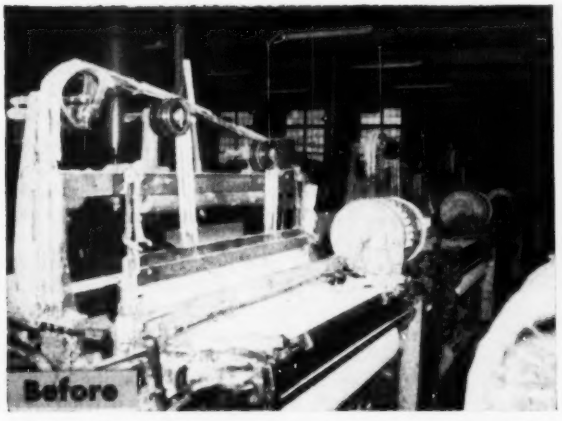
ABOUT 0.44 lb. of yarn is now spun on warp bobbins on the 84 240-sp. H&B frames equipped with Pneumafil.



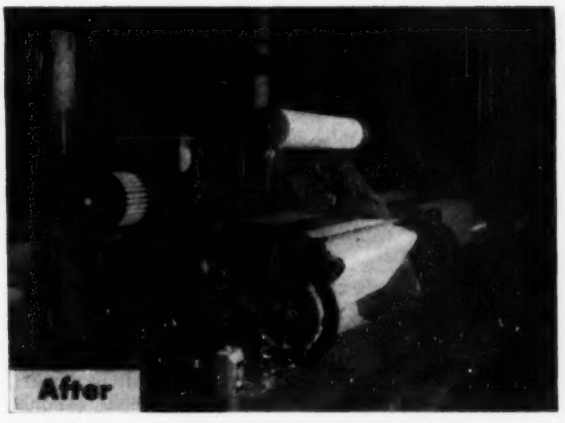
FOR COTTONS, this old Cohoes slasher was fine; and the unit is still being used for cottons. Cotton warps are used in some fancy fabrics at Simpsonville.



DOUBLE PRODUCTION and better results on spuns are two good reasons the mill installed this Uxbridge slasher. Spools in this picture are for metallic yarns that aren't slashed.

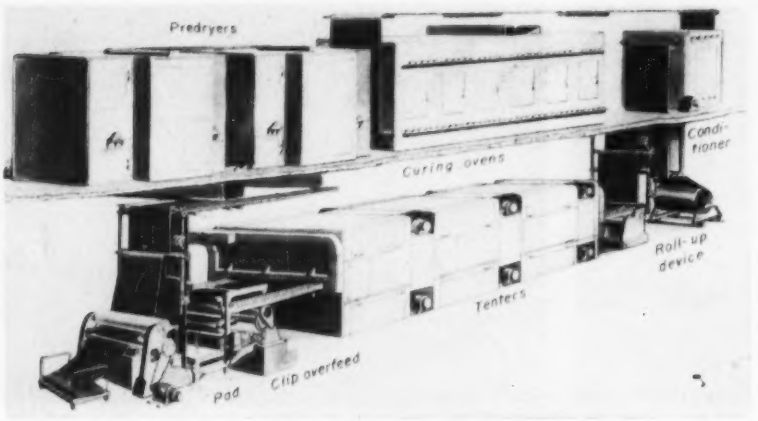


THEY'RE ALL GONE These 114 E-model looms were the last ones left in a room where all looms were once E-models. Along with the E-models, incandescent lamps and humidifier heads went out.



THEY'RE ALL XD'S now in this modern weave room equipped with air conditioning, fluorescent lighting, monorail beam handling, and polished floors. There are 528 looms in operation.

A TEXTILE EQUIPMENT NEWS FEATURE



COMPLETE EXCLUSION OF AIR is the feature of this Hunter Vapojet tenter dryer. A superheated steam atmosphere and specially designed telescopic nozzles dry cloth fed into the machine on patented clips that allow up to 20% overfeed.

New Cloth Dryer Excludes Air— Goods Dry in STEAM UNDER PRESSURE

▶ Live steam, under pressure, is used to force air from the new Vapojet dryer. Heat is maintained at 300° F. by copper conduction-type heaters. A superheated condition of 88° F. is said to prevent overdrying and give uniform, fast operation over a wide range of fabric weights.

A NEW TYPE OF DRYER, called Vapojet, designed and built by James Hunter Machine Co., North Adams, Mass., under license from Julien Dungler of Basle, Switzerland, impinges superheated steam at high velocity on both sides of the fabric. Drying speeds are high compared to older machines.

The patented design features of the dryer make it possible to obtain more efficient evaporation per foot of floor space than can be accomplished otherwise, the makers claim.

Telescopic nozzles, located between the tenter tracks within 3/16 in. of the fabric, adjust automatically when the tracks are moved in or out for different fabric widths. The tenter clip can be overfed to give the clip tenter the advantage of a pin tenter. Up to 20% overfeed can be accomplished with firmness and accuracy. The comb-type lower plate of this patented clip, made only for Hunter by Marshall & Williams Corp., permits overfeeding and insures uniform drying of the selvage.

All types of fabrics have been dried successfully. The steam-vapor atmosphere eliminates the possibility of overdrying and imparts a lofty hand to the cloth.

The Vapojet system has also been applied in predryers, where the cloth is pulled either horizontally or vertically through the enclosure. The nozzles in this application are not telescopic, but each one is 3/16 in. from the cloth, as in the tenter-machine application. This predryer is valuable for increasing the output of existing installations.

The machine is made in 10-ft. sections, each section containing a fan, copper conduction-type heaters, plenum chamber, and nozzles, above and below the travel line of the cloth. The dryer uses standard conduction-type heaters. By means of fans the temperature within the housing is kept at 300° F. Before the introduction of the cloth, a steam valve is opened and live steam under pressure forces the air from the enclosure. The temperature of this steam is raised to 300° F. by circulating through heaters; it contains 88° F. of superheat. From this point on, additional steam required to maintain the vapor atmosphere is provided by the moisture evaporated from the cloth. Any excess escapes into the airlock and is then exhausted.

When the machine is started, the fabric is admitted into the enclosure, and the superheated steam is blown onto the cloth at a speed in excess of 6,000 ft. per min.

Here's the Drying Principle

The vapor at the entering end is partially condensed over the cold surface of the cloth. The liquid with which the fabric has been impregnated, plus the condensing of the vapor, liberate latent heat that raises the temperature of the impregnating liquid to the boiling point. The fluid on the surface is evaporated, but the impregnating liquid contained in the fiber is transformed into vapor. The products in solution are kept inside the cloth as solids. The vapor goes to the surface by expansion, rather than by capillary action, and does not carry off any of the solids.

This point is important for crease-resisting and other finishing, as it prohibits migration of the finish or resin to the surface.

A slight amount of steam vapor is carried in the cloth as it is delivered from the dryer. This vapor condenses at room temperature and provides a conditioning effect so that the cloth will always retain a desirable residual moisture content. Harshness and brittleness of the fabrics, caused by overdrying, are thus eliminated, and the cloth is delivered with a lofty, fine hand.

The efficiency of this drying principle can only be accomplished by a combination of superheated steam and the high velocity at which this steam impinges on the fabric. In static conditions, for instance, super-heated steam has practically no effect, even at high temperatures.

The first installation of the predryer and overfed tenter is in operation at Cliffside Dyeing Corp., Paterson, N. J. This complete range consists of a pad, two predryers, a three-section overfed clip tenter, a curing oven, a cloth conditioner, and a batcher. The complete process of impregnating, drying, curing, conditioning, and batching is accomplished continuously.

Tricot Highlights Knitting Show

▼

New tricot machines showed 20% increase in speed

▼

Yarn-preparation, seaming, finishing, and packaging machinery attracted attention

▼

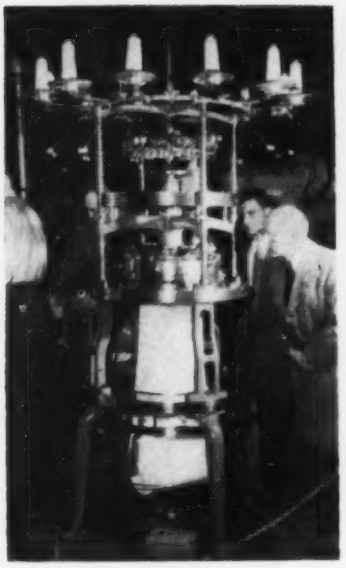
Warp knitting dominated the 41st Knitting Arts Exhibition in Atlantic City, N. J., April 27-May 1. Higher speeds and improved fabric quality were features of the tricot, raschel, and Simplex machines shown. These improvements reflected the growth that this phase of the industry has seen in the past few years and indicated that the machinery manufacturers are keeping pace.

The higher speeds—an average of 100 courses per minute over similar models shown two years ago—have been generally obtained through improved cam systems and reduced weight of knitting elements.

The preparatory yarn processes also received considerable attention. Evidence was seen that these machinery manufacturers and suppliers are tackling the problem of uneven tension and are keeping up with the high-speed knitters.

Many mill men were disappointed by the absence of circular-hosiery machines. One of the few circular machines shown was German: a 12-feed model making nonrun rayon fabric that has the appearance of tricot.

Great interest was shown in auxiliary equipment—seaming, finishing, packaging, etc. The growth of package dyeing was reflected in the attention given problems in winding and high-pressure dyeing.



Nonrun Fabric Made on Circular Machine

Circular-knitted fabric with an appearance of tricot is knitted on the Interknit machine, built by Mayer and Cie., Germany. Alfred Hofmann & Co., West New York, N. J., showed the machine.

This new development is made possible by modifications to the interlock machine. Special sinkers have replaced the dial needles. As in interlock knitting, the long needles knit at odd feeds while the short needles knit at even feeds. The sinkers push the loops out at each feed, and alternate needles rise up through the sinker loop to take the yarn. The sinkers are then drawn back to cast off their loops.

The furnishing wheels are supplied with a central regulator to control the mesh of the feed wheels. A gear-change lever provides for a selection of eight different speeds. The motor speed can be regulated to give cylinder speeds from 25 to 40 rpm. The 12-feed, 16-in.-dia. machine at the show was knitting at 36 rpm.

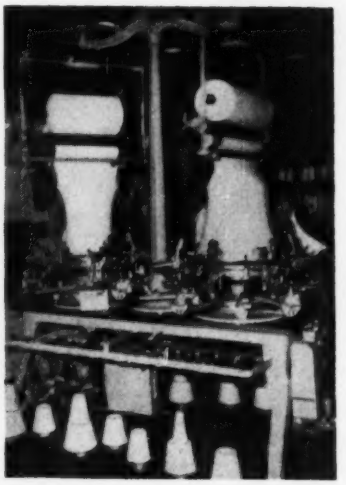
750 Courses per Minute Is New Tricot Speed

This 168-in. tricot machine, presented by Alfred Hofmann & Co., West New York, N. J., has been completely redesigned to knit up to 750 courses per minute. Pattern chains are used in place of wheels for versatility. The height of the machine is only 4 ft. 4 in., and it sits on blocks so that the working height can be made to suit any requirements.

The camshaft runs in an enclosed oil bath and drives the knitting mechanisms through short push rods from double-acting cams. The knitting elements are adjusted by changing the length of the push-rods by a screw attachment. The short coordinated movements cut down vibration. The shafts run in laminated-plastic bearings and a spring pressure is exerted on the guide-bar holders.

The runner lengths are changed by adjusting a variable-size pulley. A roller, which stretches across the warp sheet, is turned by the yarn movement to the needles to control the variable warp-speed drive units.

James H. Blore, Assistant Editor, TEXTILE WORLD, is shown in the right foreground in the photo above.



Machine Has Electric Brakes

The new D-2 machine built by Tompkins Bros. Co., Syracuse, N. Y., features several improvements. A brake fitted above the take-up is operated by an electric solenoid so that stopping the machine at high speeds is almost instantaneous and backlash is eliminated. A similar brake on the cylinder reduces wear and tear on the burrs when the machine is stopped very suddenly.

The stop-motion units have been placed under the table to allow a longer length of yarn to run to the needles when the stop motion is actuated. Press-offs and holes are said to be reduced.

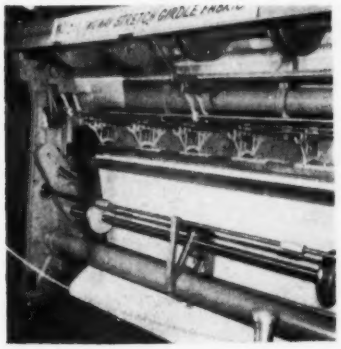
Double furnishing wheels are fitted to each feed. Each wheel is independently controlled so that stitch lengths may be governed for plush fabrics.

A five-speed pulley to give different cylinder speeds is fitted to the motor, and a worm drive allows high-speed motors to be used.

New Yarn Carrier Prevents Sinker Damage

Costly sinker damage is avoided by a special carrier made by Textile Machine Works, Reading, Pa. If the sinker motion and the carrier motion get out of time, the thread tube contacts the first sinker and swings up out of the way. The tube, which is spring mounted in a turret on the top of the carrier, is held in the working position when the machine is normally running.

The tube can be rapidly removed, and tension on the tube is adjusted by bending the end of the carrier. The carrier is very light in weight and also features a concave channel that reduces drag on the yarn.



New Needle and Sinker Bar Improve Raschel Machine

A bent stem on the latch needles allows the needle bar to be away from the plate on this raschel machine built by Kidde Mfg. Co., Inc., Bloomfield, N. J. A specially shaped sinker eliminates the latch wire, and the latches are guarded by the sinker bar as the bar comes in to hold the fabric down when the needles rise.

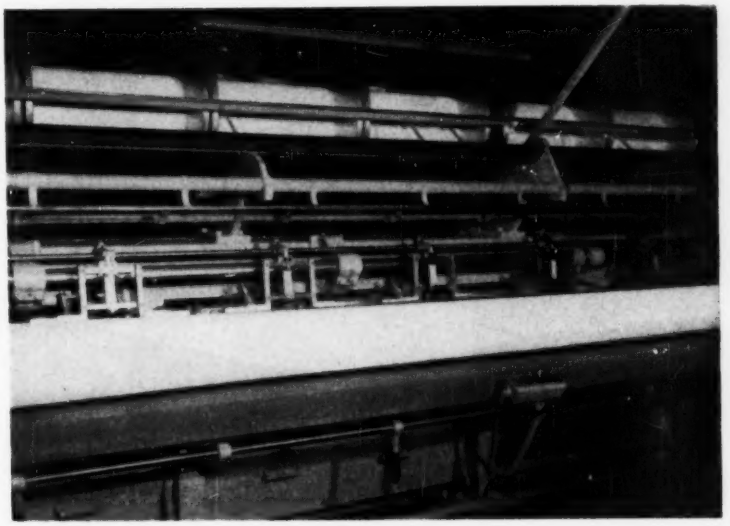
The tubular-beam construction gives a greater rigidity to the machine, and the plunger-slide mechanism is braced so that the strain is not taken on the end guide-bar bracket.

The machine has a single needle bar and six guide bars. It was knitting elastic girdle fabric with four guide bars at 400 courses per minute.

Tricot Improvements Raise Knitting Speeds

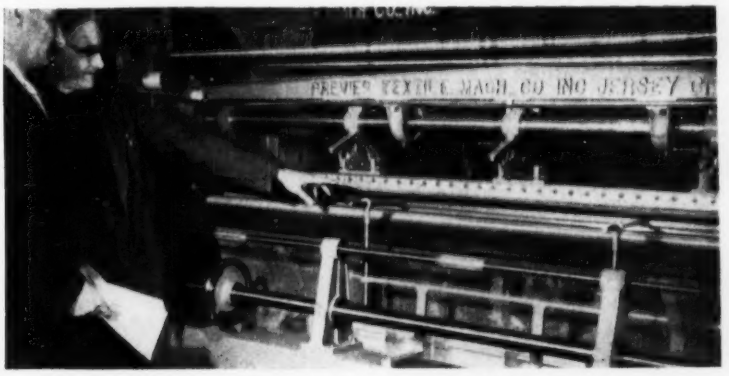
The RT-6 machine, built by Robert Reiner, Inc., Weehawken, N. J., has been designed to knit at speeds in excess of 500 courses per minute. This high speed has been achieved by reducing the weight of the inside elements.

The Reiner positive warp drive has been improved to be more foolproof and to allow fabrics with larger yields to be made more satisfactorily.



New Tricot Let-Off Is Useful for Novelties

The Kidde-Aveco tricot machine, built by the Kidde Mfg. Co., Inc., Bloomfield, N. J., was knitting 15-den. nylon at 560 courses per minute. An improved cam system not only has increased speed but gives a smoother operation. A modification of the let-off motion that is controlled from the tension rail allows the beams to stop very quickly as the demand for yarn stops. This feature is said to be particularly useful when one guide bar makes an 0-0 stitch for tuck or pleat fabrics.



Raschel Warp Knitter Has Electric Stop Motion

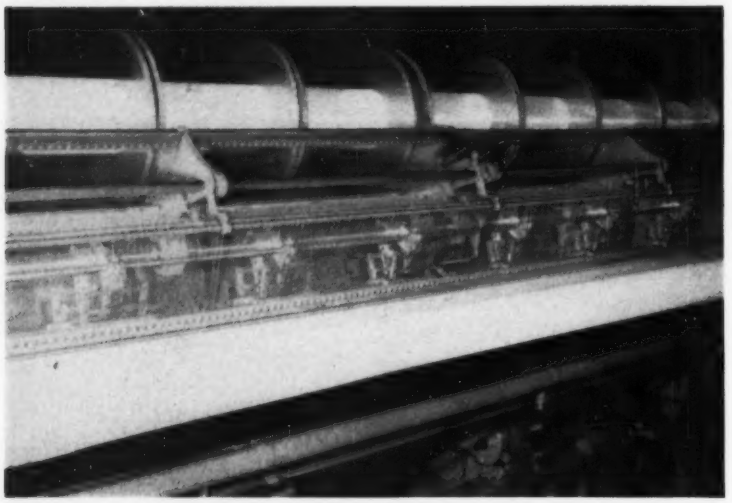
An all-purpose raschel machine at the booth of Premier Textile Machinery Co., Inc., Jersey City, N. J., was equipped with two guide bars and one needle bar to make bridal veiling at 350 courses per minute. Up to six guide bars and two needle bars can be supplied, along with chopper bars, plush points, and inlay attachments.

Stretched across the comb plate is a bar studded with electric contacts. Under normal circumstances the fabric keeps the contacts away from the comb plate. When an end breaks and a defect is made in the cloth, a contact is made to the comb plate and the machine is stopped.

To reduce vibration and improve quality, a reciprocating cam system with a master cam and a complimentary cam is used to drive the needle and guide bars. Adjustments of the needle bar and the guide bars are predetermined to eliminate guesswork in machine setting.

A new clutch arrangement controls the take-up rolls to eliminate the ratchets that gave trouble when they became worn, while the let-off motion is actuated by the tension bar through a slip-clutch arrangement.

Knitting Machines at the Show



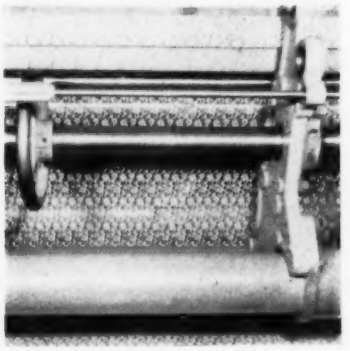
Whitin Tricot Machine Features Diehl Drive

A speed of 530 courses per minute is reached by this Model D tricot machine shown by Whitin Machine Works, Whitinsville, Mass. The machine has been re-engineered to remove 450 lb. of mass to make this high speed possible.

The Whitin-Diehl power transmitter has been designed especially for the new machine to insure quick stops and starts with a full range control of inching and jogging. The hand wheels normally used are replaced by a control bar that runs the full width of the machine.

The power transmitter is actually a 5-hp., 1,750-rpm. motor with clutch and brake built in.

The let-off has been improved and is self-compensating and self-correcting to control the beam speed at all times. The runner lengths are controlled to very fine limits. The let-off units are easily adjusted by turning a micrometer-thimble dial.

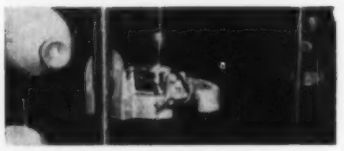


New Raschel Machine Produces Lace-Like Fabrics

A new raschel machine built by Robert Reiner, Inc., Weehawken, N. J., has eight guide bars and was knitting a novelty lace-like flowered design. This machine—a 36-gauge machine with 18 needles per inch—was knitting acetate at a speed of 180 courses per minute.

A feature of the machine is a new type of automat that enables fabrics to be knitted with different stitches at predetermined intervals without long lengths of pattern chain. The automat controls the pattern chain to give a bigger design without pattern repeats. The selector latch is moved so that certain guide bars can be controlled by different sets of pattern chains.

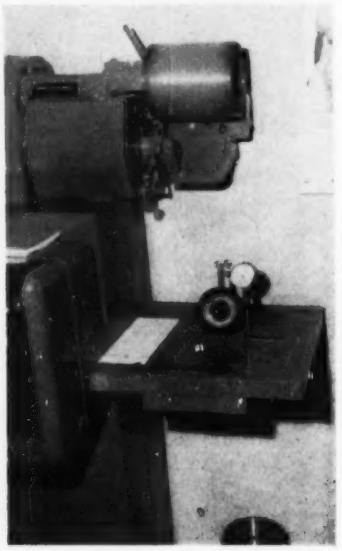
Yarn-Preparation Equipment at the Show



Beamer Stop Motion

The BLT stop motion (for broken, loose, and tight ends), shown by Walter Kidde & Co., Inc., Belleville, N. J., is designed to stop the beamer, whenever possible, before an end breaks, or at least before it gets lost in the beam. Yarn gathering at the target eye or the eye in the control arm causes the tension to rise, triggers the control finger (behind the eye), and stops the beamer. A light indicates where the trouble is.

The stop motion is easily mounted on the warp-compensator tension device, close to the supply package.

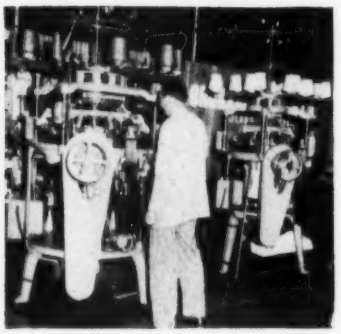


Yarn Tension Brake For Wide Range of Speeds

A magnetic yarn-tension brake for warpers was shown by General Electric Co., Schenectady, N. Y. The hysteresis brake is said to hold the tension of nylon, rayon, and other tension-troubling yarns constant over a wide speed range. The tension brake replaces the friction brake and is said to eliminate the problem of static.

Tension can be accurately duplicated after a stop, and stalled tension is held by the reversing action of the brake as the machine comes to a standstill. An adjustment knob is calibrated from 1 to 10 grams. The brake is made with two magnets, a nylon pulley and a pulley guard, a hysteresis ring of soft iron, and an adjusting cylinder mounted on ball bearings. The brake is now available to mills. Price quoted is $8.50 net.

Knitting Machines at the Show



Revolving Head Knitter Features Fixed Take-up

A stationary tension take-up attachment is fitted to the new OTA and OGA machines shown by Ordnance Gauge Co., Philadelphia, Pa. The take-up is simple in operation but can handle up to 30 ft. of fabric per minute at a constant tension.

The device does not ride up the cloth but is driven by a high-speed vertical shaft from the main drive. A small cam at the base of the shaft transmits many small movements to a one-way drive on the take-up. There are no pawls, and the small movements apply a steady tension to the cloth. The distance between the take-up rolls and the cylinder has been increased to further improve quality by reducing the angle between the fabric and the cylinder.

The three-color striper boxes have been reduced in size to make the internal parts more accessible. Turning cams take up less space and are more positive than the old-style starwheels. The turning cams can be removed without removing the cam box.

A two-speed motor accommodates changes in knitting. The OGA machine knits interlock bodies with rib cuffs, while the OTA machine knits jersey and interlock bodies.

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New Simplex Combines Presser and Sinker Motion

A two-faced open-work fabric was being knitted at 400 courses per minute on a Mayer Simplex machine shown by Alfred Hofmann & Co., West New York, N. J. The sinkers on the machine have no throat. The loops are knocked over on the edge of the sinker, while the opposing needle holds the fabric down. The pressure bar is fixed to the top of the sinker bar to give a combined sinker and presser motion.

As most Simplex fabrics are made with a 1:1 ratio, the warp-drive mechanism for both bars is controlled from one unit, although two units can be fitted for uneven ratios. A number of ends from the warp sheet are passed through a set of toothed gears to control the let-off motion. Adjustments in warp delivery are made by altering the mesh of the toothed gears. Meshing the gears in deeper supplies more yarn to the needles. The initial beam diameter is set by a dial.

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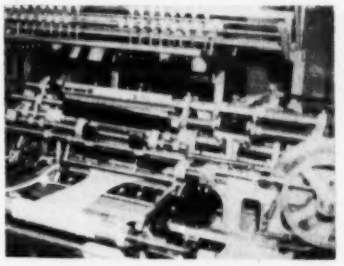
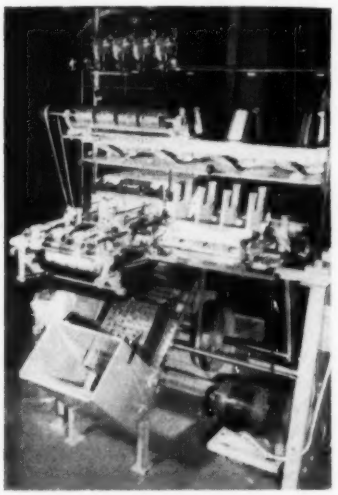


Shorter Needles Improve 72-Gauge Full-Fashioned Machine

This twin knitter built by Robert Reiner, Inc., Weehawken, N. J., was knitting 12-den. nylon. Needles shorter than those on previous machines have been fitted to give less vibration. The Pointex rocker attachment has been moved to the center of the machine to improve quality by giving a more even rocker motion. A center-bed heating device developed by Henri LeFeaux, TEXTILE WORLD consulting editor, contributed to the successful running of this machine in the uncontrolled atmosphere of Convention Hall.

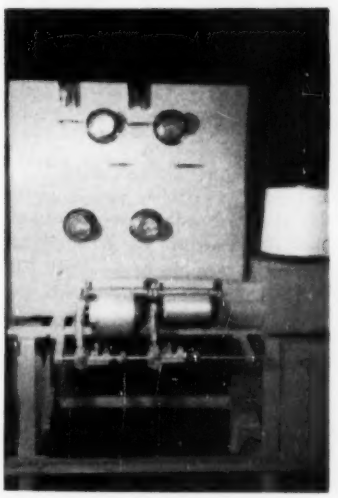
Yarn-Preparation Equipment at the Show

Cop-Winder Attachment and New Take-up Spindle



Automatic boxing is possible on the Foster-Muschamp automatic hosiery cop winder with this new attachment. Bobbins are doffed right into the shipping box. An oiling attachment—a stainless steel roll turning in a stainless steel trough—has also been added. Both attachments can be put on most machines now in production, according to the exhibitor, Foster Machine Co., Westfield, Mass.

Drum-driven take-up spindle replaces the twister-spindle type of take-up in the spinning of filament yarns. Speeds up to 700 yd. per min. are said to be possible. The new spindle, Model 402, is for existing continuous-process machines or as a feature on new machines. It was shown by Foster Machine Co., Westfield, Mass.



Winding or Redrawing Done at 1,000 Yd. per Min.

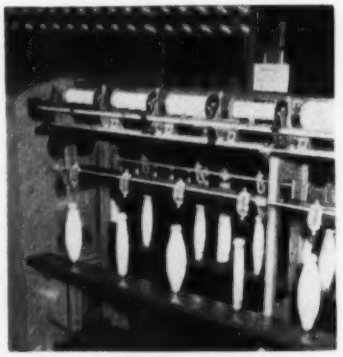
The Speedex winder for winding spinning bobbins or redrawing synthetic yarns was shown for the first time by Fletcher Works, Inc., Philadelphia, Pa.

The new machine operates on a lathe-like principle. The bobbin is held on fixed centers to produce a concentrive and balanced yarn mass. Guides are self-threading, and the winder can be equipped with a builder motion to produce a tapered-top spool. Swifts can also be run if desired.

Only a couple of hours' work is needed to start the machine after delivery because it is shipped in three sections and just needs bolting together.

A 60-position machine costs about $28 to $35 per spindle.

Fletcher also showed its king-spool twister with a new type of feeler device for the stop motion. The feeler is activated if the yarn is in position. If the end breaks, the feeler stays in position and stops the spindle. Tension is minimized because there is no extra weight on the yarn.

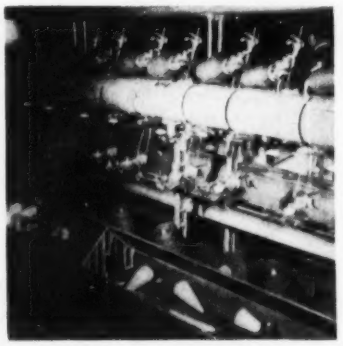


THIS NEW WINDER ran at an average yarn speed of 1,000 yd. per min. during the show on both 15- and 40-den. nylon.

Bobbin for S- or Z-Twist Yarns

A new-type bobbin with a double slot at the bottom, one slot for S-twist yarns and one for Z-twist yarns, was shown by St. Regis Paper Co., New York, N. Y., in combination with Engineered Plastics, Inc., Gibsonville, N. C.

In addition to the two slots, the bobbin also has a narrow groove. These features are said to prevent tangled ends and breakage of ends when the bobbins are later creeled in other machines.



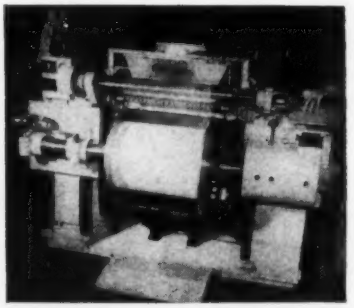
Speed of New Cone Winder Is 820 Yd. per Min.

A rotating yarn guide is one of the features of a high-efficiency cone winder shown by American Schweiter Co., Whitinsville, Mass. The new winder, called HKD, is for cotton, wool, and blended yarns.

The standard model makes a conical cross-wound package of 9¼° taper and 5⅞ in. traverse length. The machine can also be equipped to make cylindrical as well as conical cross-wound packages.

There is no reciprocating movement to the rotating yarn guide; so speeds up to 820 yd. per min. are said to be possible.

Cost of the new winder is about $120 per spindle for 8- to 12-spindle units and about $100 per spindle in larger units.



Changes in Tricot Warper Put Air to Work

Five major modifications have been made in the tricot warper shown by Cocker Machine and Foundry Co., Gastonia, N. C. Two of the changes use compressed air.

An air cylinder now moves the presser roll and holds it against the beam. This job was previously done by a gear motor, but air is said to give more accurate control. A gauge indicates pressure on the beam, and resetting the pressure to make beams of equal density is as easy as reading the gauge.

Doffing full beams is now also done by air. A selector switch is turned to the Doff position and the rest is done automatically. Empty beams are also raised into position automatically by air.

The other three improvements are a new location for the presser-roll brake, front wiring for electrical components, and a 2-in. reduction in the yarn distance between the carrier roll and the beam.

New Twister Bobbin

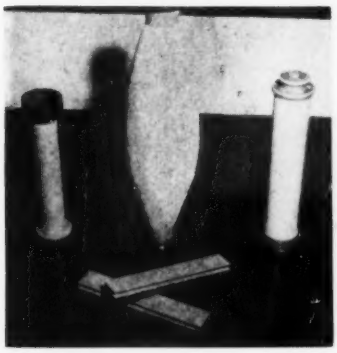
A large twister bobbin with a new type of internal construction said to withstand the pressure of nylon and other synthetic-fiber yarns was shown in the booth of St. Regis Paper Co., New York, N. Y., by Engineered Plastics, Inc., Gibsonville, N. C.

The barrel of the spool is made of aluminum tubing covered with laminated plastic. The plastic is bonded to the aluminum core.

Laminated plastic or fiber flanges are securely fastened to the barrel with expanding rings that hold the screws in the flanges.

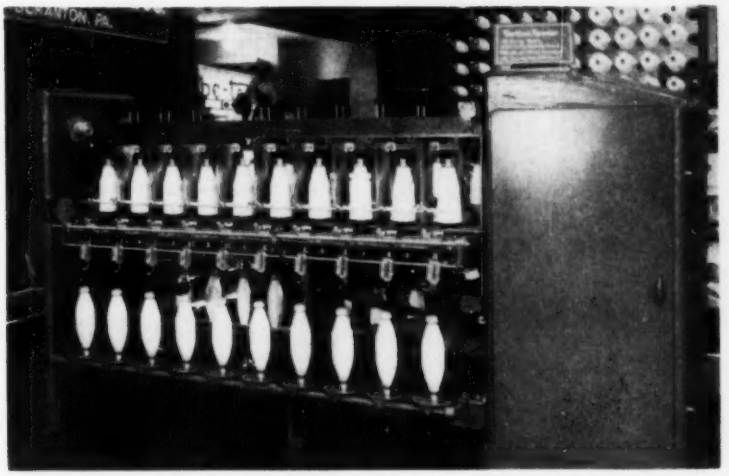
The laminated-plastic spindle bearing is dynamically balanced to reduce vibration.

The bobbin with these special features is said to pay off in high-quality yarns, lower maintenance costs, and lower power consumption.



For Winding, Throwing, And Weaving

New products presented by Synthane Corp., Oaks, Pa., are: (1) a new bobbin for the vertical spooler announced by U. S. Textile Machine Co., (2) a vibrator block for looms that is made of laminated plastic and is said to have run 34 months without being half worn out, (3) a laminated-Bakelite pirn cap with a rubber insert ring that fits more pirns than the earlier model and also minimizes yarn contact to reduce drag, (4) a dye-tube chuck for Universal and Foster winders that is used in conjunction with a spacer tube that enables a stockinette to be used and a soft, penetrable package to be wound that is better for uniform dyeing.



THIS NEW VERTICAL SPOOLER had an average winding speed of 685 yd. per min. The yarn was 40-den. nylon, spindle speed 3,150 rpm., and 1-lb running time 2¾ hrs.

Vertical Spooler Makes Bottle-Wind Package

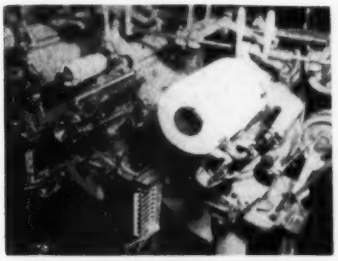
A new vertical spooler for throwing nylon yarn to be used in tricot and in hosiery was shown by U. S. Textile Machine Co., Scranton, Pa.

Possibilities of broken filaments are said to be reduced by elimination of the top head on the spool. The bottle-wind package then goes to the uptwister to make a finished, headless package.

The builder attachment can be disconnected to make a conventional double-head package.

An oiling attachment for the vertical spooler consists of an all-stainless-steel emulsion roll and trough. Cost of the new machine is about $75 per spindle, including the oiling attachment.

Universal Winders Have Three New Features



SOFT-PRESSURE ATTACHMENT for the No. 50 winder winds soft tubes for package dyeing. Quick-doffing arbor is said to minimize package handling on the No. 50 and the No. 44.

A soft-pressure attachment and a new type of arbor for the No. 50 winder, and a new slub catcher were shown by Universal Winding Co., Providence, R. I.

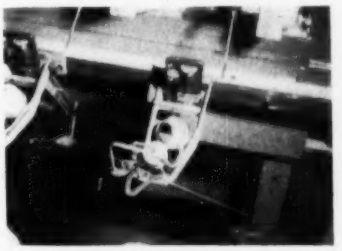
The pressure attachment is for closer tension control and adjustment in the winding of filament synthetics on 1⅝-in.-dia. dye tubes. The attachment consists essentially of two parts, a roller bail and a wire traversing guide.

The roller bail distributes the pressure over the entire package length instead of concentrating it at the point of winding and actually rolls the yarn onto the package.

A special wire traversing guide curves over the roll and brings the delivery point of the guide very close to the package.

Universal also showed a new quick-doffing, expanding-type arbor for winding filament synthetic dye tubes on the No. 50 machine. A similar arbor, built around a ball-bearing spindle, is also available for the No. 44 winder, as is an adapta-type arbor that fits over the ⅜-in. tubing spindle to allow winding of 1⅝-in. dye tubes.

The third feature of the Universal display was Micro-Set, a slub catcher



SLUB CATCHER, designed to catch the torpedo type, features easy and accurate adjustment of the blade by this red dial.

for the Roto-Coner. The slub catcher was designed particularly to catch the torpedo-type slub found in many blended yarns, but it is also extremely effective on worsteds. It consists of a toggle-type blade that is bent back to the anvil to break the yarn at a slub. An easy-to-read dial adjusts the opening from 0 to 0.030 in.

Yarn-Preparation Equipment at the Show

DUAL SPINDLE on this triple-deck twister doubles the effective spindle speed and therefore doubles production.

Triple-Deck Dual Twister Doubles Production

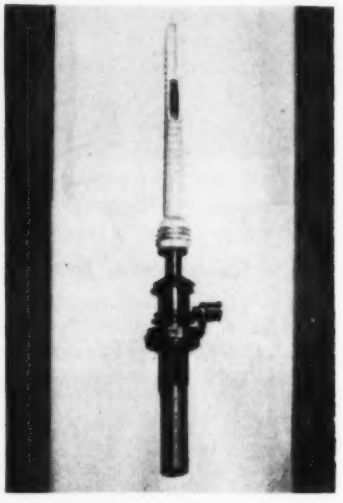
A new twister that is equipped with a dual spindle developed by The Duplan Corp. was shown by U. S. Textile Machine Co., Scranton, Pa. The yarn comes from the supply package to the top of a hollow spindle, down through the core, and up again to the headless package. One strand balloons out; so there is no interference between the two, and two turns of twist are put in for each turn of the spindle.

The triple-deck dual twister produces 388 lb. of 30-den., 27-turn yarn in 120 hr. Half-pound running time is 47 hr. for the new machine compared with 94 hr. for other models.

Spindle speed is 13,000 rpm., but design of the spindle makes the effective speed 26,000 rpm. Floorspace for the new twister is 93 sq. ft.: 36 in. wide, 6 ft. 7 in. high, and 31 ft. long for a 300-spindle unit with 6-in. spacing. Horsepower required is 10 at 1,800 rpm.

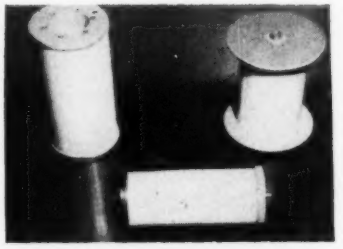
Deniers from 20 to 300 can be twisted on the dual machine. Over 1-million yards of fabric are said to have already been made from yarn twisted on the Duplan spindle.

Cost of the new twister, based on a 300-spindle unit, is about $70 per spindle.



Quill Centers on New Spindle

This roller-bearing spindle, built out toward the top to contact the quill there, gives a floating motion to the footstep bearing to allow the package to center itself and eliminate vibration. The spindle was shown by Marquette Metal Products Co., Cleveland, Ohio.



CONTROLLED SHRINKAGE of nylon yarn is possible with these collapsible bobbins and mandrels. Throwsters and yarn producers are particularly interested in the positive control possible with the idea, which was originated by Synthane's Clarence Moss.

Collapsible Bobbins Shown for First Time

Three samples of collapsible bobbins for the preshrinking of nylon and similar fibers were shown by Synthane Corp., Oaks, Pa. All the bobbins, mandrels, etc., operate on the same principle: dual plastic tubes, spirally overlapping, give under the pressure of the yarn as it takes up in preshrinking. The barrel circumference actually reduces about 15%. Shrinkages up to the maximum (13% for nylon) can be obtained and the shrinkage can be accurately controlled.

The three products shown were: (1) a collapsible mandrel for the face-drive headless-package twister made by U. S. Textile Machine Co., (2) a similar mandrel for the Unirail headless-package twister made by Universal Winding Co., and (3) a collapsible steaming or transfer bobbin that is designed for any conventional uptwisters now in use.

Dyeing and Finishing Equipment at the Show

Fine-Gauge Looper

A 44-point looper was shown by Southern Textile Machinery Co., Paducah, Ky. This fine-gauge looper has been made expressly for the looping of stockings from the 474-needle seamless machines.

Also shown at this booth were a number of new adjustable fluorescent lights that are used on seaming and looping machines. These lights can be mounted on the floor or on the table, and they can be used in any position to suit the operator.

New Preboarding Machine

Six-at-a-time stripping by two operators makes production of 46 doz. pairs per hour possible on this new preboarding machine made by Proctor & Schwartz, Inc., Philadelphia, Pa. The three units are rotated 120° each cycle. A freshly loaded carrier moves under the chamber, and the chamber comes down to steam the hose under controlled conditions. While one carrier is being preboarded, the previous one is open to the atmosphere to dry completely and cool for stripping.

Yarn-Preparation Equipment at the Show

Yarn-Conditioning System Has Two New Features

An automatic lifting device for the level tank and a booster attachment are the two latest improvements on the Surco process for conditioning yarn right in the winder. Kearny Mfg. Co., Inc., Kearny, N. J., is the maker.

The lifting device raises the liquid reservoir so that the height of the liquid in the trough is raised and more moisture is fed through the sponge and screen to the yarn. The system shown for the first time at the Greenville Show last fall had this adjustable feature, but there was no convenient way to record tank height. The tank is now fitted with a rack and pinion, and a graduated scale has a dial on it so that exact height can be recorded and set again if necessary.

The booster attachment is a cam arrangement that compresses the sponge at intervals to squeeze out more liquid for heavy conditioning and for coarse yarns.

The regular Surco system, which puts up to 10% moisture in yarn as it is being wound, costs about $32 per spindle. The booster attachment allows conditioning up to 18% and adds about $16 per spindle to the basic price.

Yarns

▶ The inner structure of dynel in blends was explained at the booth of Union Carbide and Carbon Corp., New York, N. Y. The idea is to take three 50-50 dynel-and-cotton garments, for instance, dissolve out the dynel in one piece, and dissolve out the cotton in another. The all-dynel garment is shown to have the same size and shape as the original, whereas the all-cotton garment stretches and sags.

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▶ Chromspun acetate for knitting was featured by Tennessee Eastman Co., Kingsport, Tenn. The Chromspun can be used in interlock knitting or for stripe or clock work in half hose. Staple yarn is available in nine colors and filament in 21 colors. The principle deniers are 55 and 75 at the standard 3 tpi., Z-twist.

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▶ Joseph Klumpp Co., Philadelphia, Pa., showed Orlon yarns in a wide range of shades, including navy, maroon, scarlet, gold, and brown. The dyeing was done at Tryon Processing Co., Tryon, N. C., and is said to be the most complete range yet obtained.

Du Pont's New Orlon—Type 42

A complete range of shades with much better fastness can be obtained on the new Type 42 Orlon (see also page 128) shown by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. Conventional dyeing methods can be used; high pressures are not required for good results. Fabrics shown at the booth were all piece dyed.

Of particular interest was a union dye of 80% Orlon and 20% wool. The navy shade was obtained by a basic color on the Orlon and a chrome dye on the wool. The fabric was beck dyed.

Greater brilliance is said to be possible with the new Orlon because less copper has to be used.

Acetate colors on the new Orlon last up to 40 hr. in lightfastness tests as compared with 2 to 3 hr. on Type 41 Orlon.

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▶ For the twisting of Helanca yarns, lightweight single- and two-arm flyers made of aluminum stamping and molded nylon were exhibited by Herr Mfg. Co., Inc., Buffalo, N. Y. Though the flyers are light in weight, they are said to have the pulling capacity that is required to keep the correct tension.

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"Stretchy" Spun Nylon Yarn And a Synthetic Cashmere

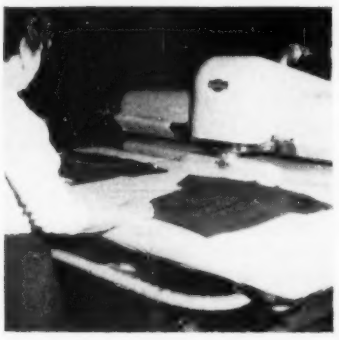
Two new types of yarn created interest at the exhibit of Associated Spinners, Inc., Gastonia, N. C.

A different type of "stretchy" nylon yarn is spun on the worsted system and then twisted and chemically treated by a special process. The resultant yarn has the appearance of a normal yarn on the package and in knitting, but when relaxed it coils like a spring. Dacron "stretchy" yarn is also being made.

Fabrics made of the new yarn are said to have a gentle elastic property—not as pronounced as that of the "crimped" nylon filament yarn now on the market.

The other new yarn shown by this company was a synthetic cashmere that has just been developed and is a blend. It has a very soft hand, much like the natural product.

Dyeing and Finishing Equipment at the Show

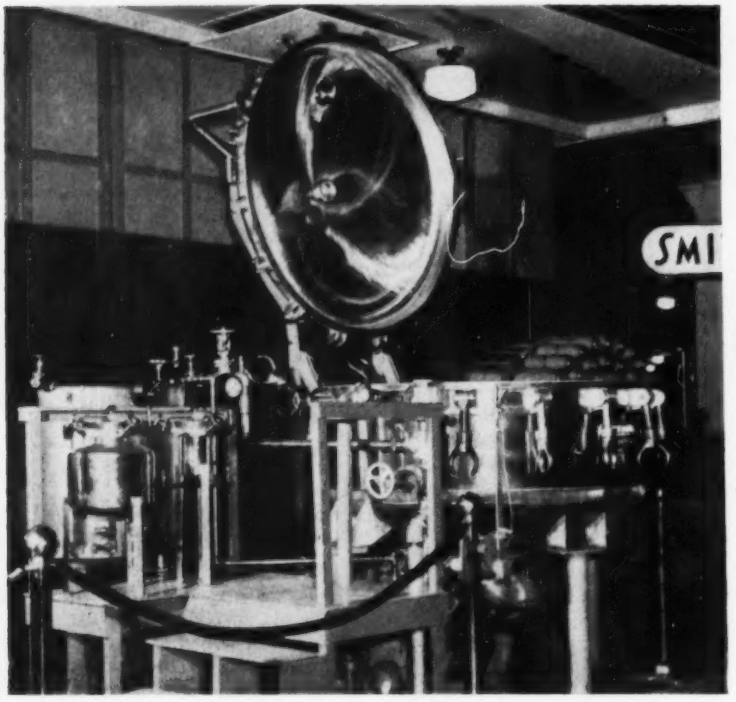


"Twin-Rapid" Machine Reduces Pressing Time

A garment press built by Brown and Greene and shown by Mellor Bromley Group, Inc., New York, N. Y., consists of two beds that rotate. One bed is loaded while the garments on the other bed are being pressed. The pressing and drying cycle is controlled.

The garments are laid on the bed and the operator swings the bed around to the pressing position. The bottom bed moves up into position, and steam is entered into the top bed for any period from 10 sec. to 1½ min. A vacuum pump operates at the end of the pressing cycle to draw air through the bed to dry the garments. The lower bed then drops automatically and the operator swings the bed around to unload and load the machine while another batch is being pressed.

Two foot controls are situated at the front of the machine—one to provide a free steam to garments that do not require pressing and another to interrupt the pressing period regardless of the automatic setting.



Pressure-Dyeing Machine

This machine, made in 25- to 1,000-lb. capacity, handles raw stock, top, or yarn on springs or tubes. A sampling chamber allows sampling or dye additions without reduction of pressure or temperature. A pressurized expansion tank keeps the liquor at 81 psi., 325° F. Smith, Drum & Co., Philadelphia, Pa., is the maker.

Suction-Type Machine Speeds Hosiery Turning

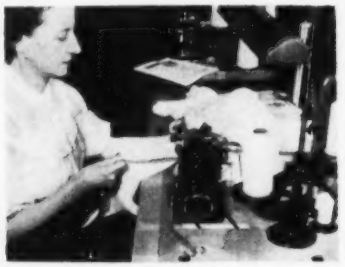
A two-operator, pneumatic hosiery-turning machine that eliminates the usual inspection and hand-turning operation on all types of hosiery and that can produce at an average rate of 650 doz. units per operator every 8 hr. was displayed by International Textile Machine Co., Charlotte, N. C. The machine has tubes of four different diameters to cover all sizes of hosiery.

A foot-operated tripper is provided to drop the loose dozens in the bags or trucks below. The untied hose then go directly to the dyehouse.

The machine is priced at $950, complete with a 1-hp. blowing turbine.

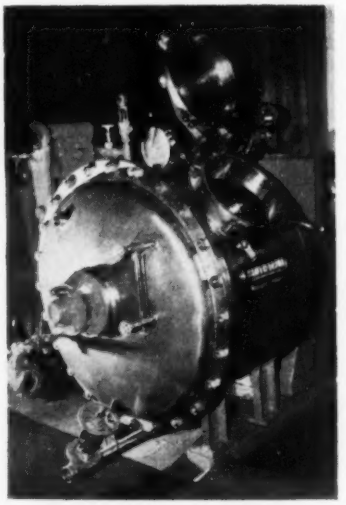
Device for Sewing Elastic

Tensionless elastic is supplied to the sewing machine by a pull-off device that operates directly from the machine pulley. The device was demonstrated by Singer Sewing Machine Co., New York, N. Y. It has a ball-bearing mounted pulley shaft and spaced guides that prevent the elastic from snagging or hanging on the supply spool.



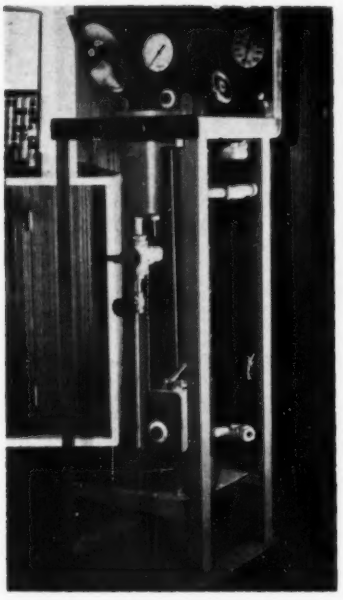
Combines Shirring And Overseaming

Shirring is done simultaneously with the overseaming operation by this combination machine, and the shirring mechanism is brought into and out of operation by either a foot or knee control. The machine, demonstrated by Merrow Machine Co., Hartford, Conn., is recommended for setting sleeves, shirring midriffs and bodices, attaching lace, and general shirring and overseaming work on knitted, woven, or plastic materials.



Rotary Dyeing Machine

Fifty to sixty pounds of hosiery can be dyed in this four-compartment rotary dyeing machine. Made by Smith, Drum & Co., Philadelphia, Pa., the machine operates at 52 psi., 300° F.



Air Dryer

Extraction and drying of samples in 2¼ hr. is possible with this air dryer. Designed for drying one package of spun yarn, the machine can speed up laboratory sample work. The manufacturer is Smith, Drum & Co., Philadelphia, Pa.

Marks Data on Hosiery Welts

A hosiery-printing machine that marks hosiery welts with trade name, size, denier, gauge, etc., was a feature of Markem Machine Co., Keene, N. H. Speed is adjustable from 0 to 100 printing strokes per minute, depending on the ability of the operator. The cost of printing is about 5¢ per thousand with a proficient operator.

Singer Shows New Equipment

New equipment shown by Singer Sewing Machine Co., New York, N. Y., included:

A high-speed, automatically lubricated, single-needle lockstitch sewing machine (251 class) that is said to require a minimum of needle-thread tension and to tack easily with no "staggered" stitches.

A high-speed automatically lubricated, single-thread machine for label sewing, the 240W4.

A two-needle overedging machine, the 246SV2, for trimming and overedging loosely woven or knitted fabrics. The stitch is said to have high elasticity and strength and up to 5,000 stitches per minute are possible. Automatic lubrication is another feature of the machine.

New fittings for seaming 12-den. hose on the Singer 242-2 machine.

A totally enclosed motor (S53 Class) with lifetime-lubricated bearings that are said to insure instant starting and stopping and maximum operator control of the machine speed.

Insert tables that handle different machines with no disturbance of the motor or wires.

An automatic label sewer, 69SV288, that stitches all four sides of prefolded 1 5/16x1 3/16-in. labels.

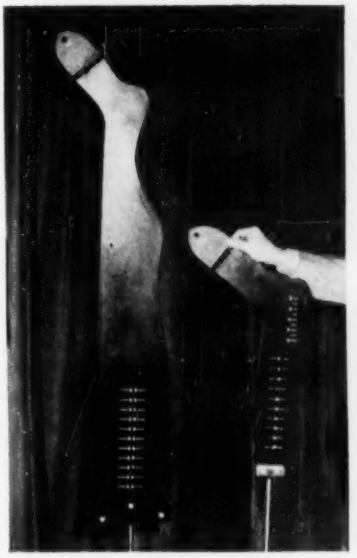
An intermittent and differential feed machine, 400W31, that gathers or stretches material as controlled by a knee or foot control.

Automatic Garment Presser

U. S. Hoffman Machinery Corp., New York, N. Y., showed its CX-FFZ, an automatic garment presser, for the first time. The machine goes through the entire pressing cycle automatically and can be set from 1 to 60 sec. in any operation—steam, press, release, and vacuum.

Shirt and Coat Finisher

Improvements in the Hoffmatic sport-shirt and outerwear coat finisher were presented by U. S. Hoffman Machinery Corp., New York, N. Y. Model Q-12, for children's sizes from 2 to 12, and the Q-11 (shown in an earlier design last year), for men's sizes from 14 up, are now available. Both forms fit the same base and feature automatic operation that is said to cut pressing costs at least 50%.



Form Checks Seven Sizes

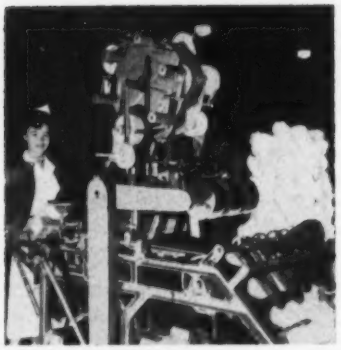
One checking form that checks seven sizes of stockings has been developed by United Knitting Machine Co., Philadelphia, Pa. The toe is lifted off and on by hand to change the form for checking seven stocking sizes.

The form is said to save the operator's time when stockings are being checked for foot size, heel length, and leg length. Less floor space is required for the new form.

Numbers are engraved on the black laminated-Bakelite form to show sizes. A floor stand positions the form to the correct height for inspection.

New Transfer Machine

Uniform clean transfers up to three at a time are made by this Paramark Model 3 transfer machine made by Paramount Textile Machinery Co., Chicago, Ill.



Sock-Transfer Machine

One, two, or three transfers in one operation at a speed of 1,500 doz. pairs per 8-hr. shift is claimed by Southern Mill Equipment Corp., Charlotte, N. C., for this Bowman transfer machine. The machine positions socks automatically, stacks in 3, 6, or 12 pairs, and needs only one operator.

Cuts and Trims in One Operation

An electrical thread trimmer for removing loose ends and threads from finished textile products was shown by Cutting Room Appliances Corp., New York, N. Y. The machine cuts and trims in one operation. Supplied in a portable as well as a stationary model, the machine can be plugged into any electrical outlet. An adjustable high-low suction control and a visible waste compartment are other features of the machine.

► New fabric and yarn effects made possible by package dyeing were emphasized by Central Yarn & Dyeing Co., Gastonia, N. C. More than 100 shades are said to have been developed for filament and spun Orlon, nylon, and Dacron. Some of the first patterned goods woven completely from package-dyed yarns were also shown, as was package-dyed 15-den. nylon for decorative stripes in tricot fabrics. Splicing yarns dyed by a new process are said to retain greater residual shrinkage after dyeing.

► A marking machine that scorches a nonraveling identification mark in stacks of natural-fiber fabric on a cutting table was shown by David Maimin & Co., Philadelphia, Pa. The Kloth-Marker is said to facilitate the assembly of garments, and it marks up to 7 in. of fabric. Price: $125.

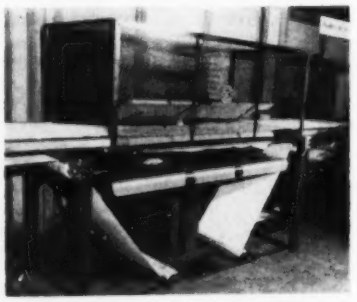
Improved Wrapping Machine

An automatic wrapping machine designed to overwrap three pairs of men's hose on a U-board, with top flaps at each end, and with a registered, printed cellophane, was shown by Hayssen Mfg. Co., Sheboygan, Wis. The machine was of particular interest to those interested in supermarket selling, where the eye appeal of cellophane must be combined with the rigidity of cardboard to withstand handling.

New features on the model shown were a card feeder and the flap creasers. The feeder automatically deposits a card at the end of the conveyor and folds it into a U-board at the same time. The flap creasers make a V-type underfold that is pressed against the bottom of the package in a positive fold.

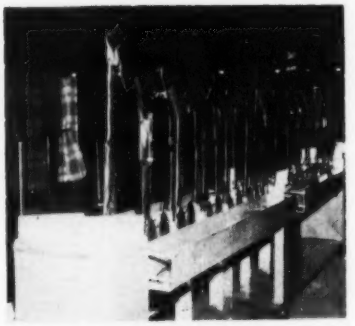
Speed of the machine shown was 35 packages per minute, but other models go as high as 45 per minute.

The machine can also be adapted for wrapping in non-heat-sealing materials by use of solvent or glue sealing equipment. All types of hosiery, underwear, and knitted garments, and a wide range of woven and sewed products can be handled.



Conveyor for Garment Press Eliminates Direct-Labor Cost

A conveyor for an air-driven garment press that allows a continuous pressing sequence was a feature of Utica Novelty & Mill Specialty Co., Utica, N. Y. Garments are folded and put on the belt, and the conveyor moves in press-load sequences; the press automatically operates for a predetermined length of time, and the conveyor carries the pressed garments to a table where they are boxed. The conveyor is said to eliminate all labor during loading, pressing, and unloading, and to pay for itself in eight months by direct-labor savings.



Drying-Form Table

Free air flow around forms, adjustable intensifier manifold, and other features make this Philadelphia Air Flow drying-form table efficient and fast to operate. It is made by Philadelphia Metal Drying Form Co., Inc., Philadelphia, Pa.

Drill Marks Through Layers

A marking drill that pushes its way through 5½ in. of fabric without burning or tearing and leaves a mark that can be seen under black light was shown in the booth of Roth Cutting Appliances by Glo-Notch Corp., New York, N. Y. A different marking liquid can be used if ordinary light is to be used. The product, which costs $325, is said to offer group marking to cutters of knit goods for the first time.

► A new Dacron dyeing aid, Dyna-Salt, to be used in conjunction with Dynadye, was shown by Amalgamated Chemical Corp., Philadelphia, Pa. The new product aids control of pH and helps assure better leveling of dyestuff.

► A continuous supply of garments is carried through the ironing units of the conveyor ironer shown by American Safety Table Co., Inc., New York, N. Y. The first unit presses the bottom, and the second unit presses the top. The machine can be adjusted for any thickness of goods, and the heat is automatically controlled.

► A flexible sewing machine stand with a cutaway portion for interchangeable maple inserts was shown by American Safety Table Co., Inc., New York, N. Y. All component parts of a machine are attached to an insert, and the stand's motor bar accommodates submerged or regular installations.

Softeners, Fixative, and Boarding Aid

Four new chemical products were shown by Kali Mfg. Co., Philadelphia, Pa.

Kalamine A, an anionic substantive softener for hosiery and knit goods, and Kalamine C, a cationic softener for wool and wool-synthetic blends, are both said to be resistant to oxidation and yellowing and to have antistatic properties.

Kalifix is a new dye fixative that is said to have no deleterious effect on cellulosic yarns or rubber yarns. Used only on direct dyes, the product is said to aid fastness to water, perspiration, and laundering.

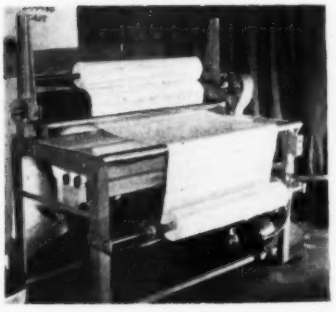
Kali Firmalube is a new product for use in conjunction with nylon finishes. Firmalube aids removal of hosiery from the forms after boarding.

Water-Soluble Lubricants

Two new knitting aids were shown by Richmond Oil, Soap & Chemical Co., Inc., Philadelphia, Pa.

Rubberknit, a water-soluble lubricant, is said to be of value for knitting rubber thread. A rust inhibitor in the lubricant is said to prevent rust formation on needles and machine parts.

Lubro #20, another water-soluble lubricant, is made for use on knitting machines where Orlon is being knitted. It can be easily washed out of Orlon, whereas regular mineral oils are very difficult to remove.



Triple-Duty Finishing Unit

Measuring, examining, and rolling are done in one operation with this machine made by Joseph Pernick Co., Inc., Maspeth, L. I., N. Y. A fluorescent light under an opaque glass forms the inspection surface. It is available in 24- to 96-in. widths, with a variable-speed motor drive.

Hosiery Mender

Mending is made simpler and more efficient by this Speedomask Super-52 mender. Working speed of the needle can be adjusted by the operator without stopping the machine. Southern Mill Equipment Corp., Charlotte, N. C., showed the new unit.

Pressed-Wood Cutting Table

A cutting table made of half-inch tempered pressed wood was displayed by David Maimin & Co., Philadelphia, Pa. The table can be refinished by sanding and retempering, and it can be furnished in seven standard widths—36, 42, 48, 54, 60, 66, and 72 in.—and up to 96 in. on special order.

► Shank Master, a 12-stitch button sewer with back-and-forth stitching, was shown by Chandler Machine Co., Ayer, Mass. The sewer is used with automatic hopper feeds or with a special fast-loading shank clamp.

► A cloth marking machine for indicating pockets, buttons, etc., on cutting-room fabrics was a feature of Cutting Room Appliances Corp., New York, N. Y. A spiral needle operated by a hand lever penetrates the stack of fabrics and leaves a chalk or paste mark.

► A creasing machine for pockets was shown by David Maimin & Co., Philadelphia, Pa. The machine uses electrically superheated steam, thermostatically controlled, to crease nylons or linens without fusing or shining. Features of the creasing machine are a Duralloy steam-discharge plate, ball-bearing action, automatic steam discharge, and adjustable die pressure. The price is in the neighborhood of $395.

Laying-Up Machine Handles All Types of Fabrics

A fully automatic laying-up machine that handles all types of materials—from knit goods to woven fabrics to plastics—was presented by Roth Cutting Appliances, Newark, N. J.

Speeds up to 30 yd. per min. are possible with the machine, which is equipped with an inspection lamp for perching at the same time as laying up.

Powered, self-aligning feed rolls are synchronized with the preset speed of the carriage. This feature, plus the hydraulic adjustable-speed transmission, is said to prevent the dragging of goods across the table.

Speed is controlled by a handwheel at the rear of the machine on the operator side—no pulleys to change. A calibrated dial controls feed-roll speed, and the feed rolls adjust automatically to fabric width.

All parts are machined; there are no castings on the machine. Prices start at $1,750, completely installed and ready to operate.

New Form Speeds Sock Picking

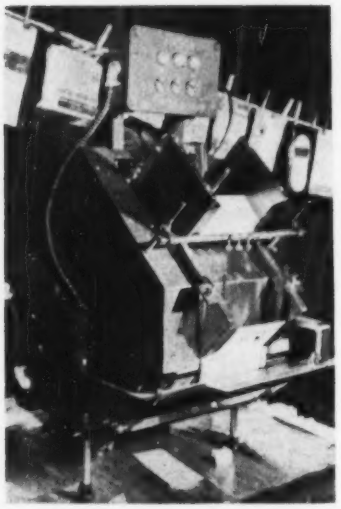
A new Bakelite form with turning strips was featured by United Knitting Machine Co., Philadelphia, Pa.

Two of the turning strips are mounted on one side of the form, and the third one is in the center of the opposite side.

The form permits the examiner to turn the stocking as it is pulled on the form. The strips also hold the material away from the board so that pull threads can be picked out easily. Selling price of the form is $48.50.

Tray Dryer

Low-temperature drying of nylon hosiery in this tray dryer made by Proctor & Schwartz, Inc., Philadelphia, Pa., eliminates the need for final boarding and drying after dyeing. A capacity of 40 doz. pairs per hour is possible with unskilled help.



Automatic Bag-Sealing Machine

A machine to automatically seal and label bags made from cellophane, polyethylene, pliofilm, heat-sealing papers, etc., was shown by Amsco Packaging Machinery, Inc., Long Island City, N. Y.

An operator guides or places filled bags vertically in a hopper and starts the machine by touching a hand-trip starter plate. Then a folding bar automatically guides the bag top and label between the jaws of the machine.

The two sealing jaws are equipped with a hermetically sealed heating element to provide maximum heat penetration to the inner sealing surfaces of the bag.

The machine can also be bought without the labeling attachment.

Safety Device for Reading Machines

A take-up safety device—a cam, a cam stop, and two collars (all split for easy installation)—fits on the take-up bracket shaft support of Reading machines and keeps the operator from straining the metal take-up strap bands. It was shown by Hosiery Mill Accessories, Inc., Northampton, Mass.

Canvas Accessories

A vinyl-plastic-coated-duck bench (left) to lay goods on in cutting and sewing rooms was the newest feature at the booth of Meese, Inc., Madison, Ind. Other items are a sewing basket with a flap to pull over work in process to protect it at night and on week ends, and the Model 19F bundle truck for ticketed piece goods.

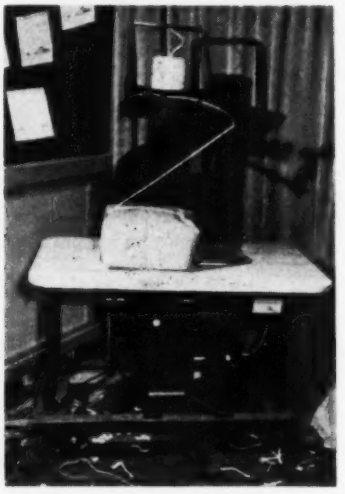
Both the Vyntex duck and the regular untreated canvas are available in all three of these items.

Utility Truck and Trays

A vulcanized-fiber truck (BUE-5) with wooden floor, roller-bearing rubber-wheel casters, and galvanized top molding was shown by Fibre Specialty Mfg. Co., Kennett Square, Pa. Measuring 41x24x24 in. inside and weighing only 47¼ lb., it can be made to order in any dimensions. The square hosiery pallet (top left) and glass-fiber-mat polyester-resin nesting tray (right) for general utility purposes were also new items of interest.

Sinker Protectors

Dura-Safety-Tubes that protect full-fashioned machines from sinker damage were on display for the first time for the Reading-machine carrier at the booth of Ernest A. Feustel, Inc., Lodi, N. J. Tubes for other types of carriers were also shown.



JUST PRESS THE FOOT LEVER, and the package is tied with a nonslip knot on this portable machine.

Large-Package Tying Machine

A portable tying machine to tie packages 20 in. or less in height was shown by National Bundle Tyer Co., Blissfield, Mich.

The tyer was developed to tie packages where mechanical compression of the bundle is not essential. A tight, securely tied package can be made by using any of several sizes of jute, sisal, or cotton twine of the proper strength.

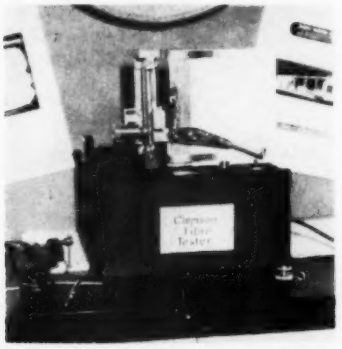
The tyer makes a firm nonslip bow knot and is geared to produce 30 ties per minute at standard operating speed.

The moving parts of the machine are fitted with ball, needle, and graphite bronze bearings to insure long life.

▶ A lower priced and modified version of the OrthoRater for smaller mills was shown by Bausch & Lomb Optical Co., Rochester, N. Y. The new model uses the same 12 tests of vision, but the slides are inserted by hand and the constructional changes have brought the price down to $370, including a year's service.

Drive Unit Improved On Circular Machines

Motors on all machines built by Jacquard Knitting Machine Co., Inc., Philadelphia, Pa., are now being installed under the base ring in an accessible but out-of-the-way position. Machines are also now equipped with a Warner electric clutch to allow slow jogging.



Clemson Flat-Bundle Fiber Tester

A new fiber tester for the tensile-strength testing of cotton fibers in flat bundles, the Clemson Flat-Bundle Fiber Tester, was shown by Scott Testers, Inc., Providence, R. I.

The instrument uses standard clamp equipment and sample techniques, but the sample clamps are positioned in the vertical plane. A motor-driven, dead-weight loading system increases the load by 1,000 grams per second, and the test is recorded on a chart that indicates the breaking load directly in grams and the sample elongation. Up to five tests can be recorded on one chart.

An advantage of the Clemson tester is its capacity to handle different gauge lengths: the sample gauge length can be varied from 0 to 10 mm. A scale on the clamp holder shows the clamp separation in millimeters, which reflects the sample gauge length.

Oil-Measuring Fittings

Oil-measuring fittings that are recommended for twister rings and knitting machines were shown by Alemite Div., Stewart-Warner Corp., Chicago, Ill. The Type O Accumeter system is designed for close-quarter oil lubrication at a minimum of 50° F; the valves are about 1 in. long with a fixed output of 0.005 cu. in. The Type I system is designed for machines that require a heavier lubricant in greater quantity than that handled by the Type O system. Either system operates from a single supply line.

► Tension rings to go on the hairpin drop wire on full-fashioned machines knitting 12-den. nylon were shown by American Lava Corp., Chattanooga, Tenn. Advantages of the ceramic ring are light weight and reduced tension for fewer press-offs and no broken filaments.

Three New Electric Stop Motions

The length of each roll of knitted fabric is controlled by a device developed by Stop Motion Devices Corp., Brooklyn, N. Y. The device is electrically controlled and is fixed to the base ring of any circular knitting machine, rotating head or stationary head. A fiber roller rests on the fabric, and as the fabric roll gets bigger the roller moves a lever. A thrust switch is mounted on the side of the machine, and when the fabric roll reaches its required size the roller strikes the switch and stops the machine.

A hole detector can now be fitted to rib machines. A bank of six vertical fingers detect imperfections in the cloth caused by faulty needles and the like. A throw switch closes the circuit to the electric stop motion to stop the machine. The new device is fitted to the underside of the dial in place of the oil cup.

A new-type trip lock has been developed for use on flat machines and old-type Supremes and jacquards. The attachment features a latch that is electrically pulled back to release the belt-shipper mechanism.

Cone Holder

A cone-holder has been developed by Stop-Motion Devices Corp., Brooklyn, N. Y., to grip cones firmly at the top and the bottom when they are on the knitting machine. The cone does not wobble as the machine turns, and pigtail tie-ups are made safe. The device slides onto the pin of the bobbin holder. Each unit costs 75¢; prices are proportionately lower for increased quantities.

► Latch, spring-beard, felting (jute punching), and cotton-stripping (combing) needles were displayed by Arrow Needle Co., Manchester, N. H., recently acquired division of Textile Machine Works, Reading, Pa.

► Tube-setting gauges that give uniform setting of carriers and tubes over the whole length of a full-fashioned machine were displayed by Ernest A. Feustel, Inc., Lodi, N. J. Gauges for all types of machines were shown.

The gauge works over the sinkers and dividers. The carrier is brought down to the gauge to make uniform settings possible on every section. Better stocking selvages result from the improved settings.

Giant Latch Needle Demonstrates Knitting Motion

A slow-motion latch-needle in action was the center of interest at the booth of Laconia Needle Co., Inc., Laconia, N. H., and Charles Cooper Co., Inc., Bennington, Vt. The 3-ft. needle was knitting a chain stitch in heavy white cording, about 3 stitches per minute.

Observing the operation are, left to right, George A. Parsons, president of the needle organization; Dick Scott, New York editor of TEXTILE WORLD, and Clifford O. Hodges, Laconia vice president.

Holds Up Hose Without Garters

Elastic hosiery webbing that keeps hosiery up without garters or girdles was shown by United Elastic Corp., Easthampton, Mass. The patent-pending nonslip webbing, called Anchorlastic, is made of special rubber-coated yarn woven into ⅜-, ½-, ⅞-, 1¼-, and 1½-in., widths for sewing to the top of ladies' hose or to the inside top rim of men's or children's hosiery.

No special sewing device is needed for sewing the webbing to ladies' hose, but for men's hose a special guide was demonstrated by Merrow Machine Co., Hartford, Conn. The attachment has not been priced, but it is expected to be inexpensive.

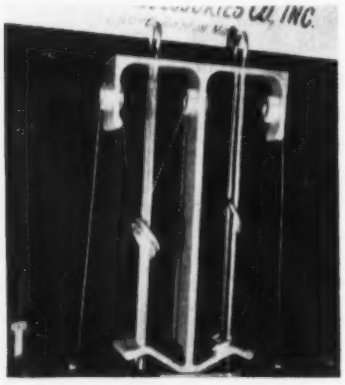
Jacquard Pattern Paper

A jacquard pattern paper made of two pieces of bonded linen fabric coated with varnish was shown by Briar Products, Berwick, Pa. Briar Tex has been on the market for about three years and is said to last much longer and to be more oil resistant than paper pattern paper. Sample widths of 5 15/16, 6⅞, and 10¼ in. are available on request.

► A new pigtail whose inner surface was coated with a heavy layer of the wear-resistant ceramic metal Heanium was shown by Heany Industrial Ceramic Corp., New Haven, Conn.

Marking Machine for Bags

A marking machine for printing data such as quality, size, and lot number on bags was shown by Markem Machine Co., Keene, N. H. The bags are imprinted and stacked at the rate of about 60 a minute, and the type can be easily changed for different requirements.



Rings Control Tension Variation

A balanced tension device, blown up in size for demonstration purposes, is ordinarily 4 in. high (see actual size at lower left) and fits onto a full-fashioned machine where the hairpin tension is located. It was displayed in large size by Hosiery Mill Accessories, Inc., Northampton, Mass.

The device replaces the hairpin devices and also makes snappers unnecessary. It controls yarn tension and is said to give even lengths, uniform splicing widths, fewer press-offs, loopless selvages, no backlash in the yarn, and less strain on carrier tubes, needles, and sinkers.

Floor-Type Sealing Machine Wraps Large Packages

A floor-type sealing machine, shown by Miller Wrapping & Sealing Machine Co., Chicago, Ill., wraps packages up to 47 in. high and 35 in. wide.

The machine requires a floor space 54 in. long and 34 in. wide. It is 76 in. high and weighs 925 lb.

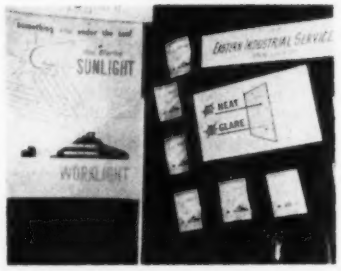
The standard sealing speed is 480 linear inches per minute, but other speeds can be used. Seal width is standard, $\frac{3}{8}$ in.

Machine specifications are a hand-crank adjustable head; 110 v. a.c. 60-cycle motor; feed-in guides or a platform; rubberized V-belt carrier section; straight seal guides; 12-in. closed-top, double-element preheater; and bead-knurl sealing rollers with thermostatic heat control.

Attachments that can be obtained for the rotary sealers are a label guide, an automatic intake, a single-fold mechanism, a compression-belt section, a variable-speed control, a counter, a hole punch, and a cooler.

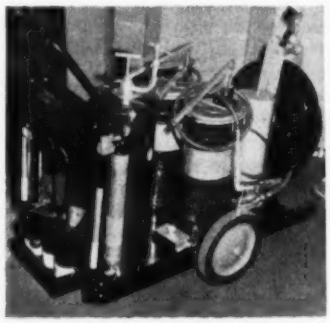
New Unit Cools and Humidifies

A packaged air-conditioning unit was shown by Air-Perme-Ator Mfg. Co., Paterson, N. J. The unit, which cools in the summer and keeps the humidity up in the winter, can be used to heat or dehumidify as well. The exhaust and intake dampers are automatically controlled by humidistats that can be set at any desired relative humidity. Units are available in 3, 5, and $7\frac{1}{2}$ tons, and they can be used with or without ductwork.



New Glass Coating Reduces Glare and Heat

A liquid plastic material for windows, Thermoglare, which is said to reduce heat transmission by 80% and glare by 95%, was shown by Eastern Industrial Service, Cambridge, Mass. The material can be sprayed on glass, wool, brick, or other surfaces at a cost of about 5¢ per sq. ft. and comes in blue-green and frost white. Solid plastic sheets are also available as replacements for glass.



Portable Cart for Lubricants

A portable cart for hauling lubricants was a feature of Alemite Div., Stewart-Warner Corp., Chicago, Ill. The Lubrikart is filled from the oil-storage drums and rolled to the machines for lubrication or reservoir refilling. Several systems—air, electric, or hand operated—can be adapted to the basic cart that is supplied with ball-bearing wheels and container brackets. The cart saves the time needed for an oiler to go back and forth refilling his lubrication containers.

► An interesting application of spot humidification was seen at the Cocker booth, where a tricot warper was running. At the beginning of the show, the huge hall was so dry that static built up and prevented smooth operation. Four Walton humidifiers saved the day, and the warper ran beautifully.

How Dionne Spins Five Typical Yarns

Yarn number	16s	20s	24s	40s	50s
Stock	50% nylon (2-in., 3-den.) 50% brt. viscose (2-in., 1.5-den.)	40% wool (60s) 60% dull viscose (2-in., 3-den.)	100% dull acetate (2-in., 3-den.)	37% cotton (1 1/4-in.) 63% brt. viscose (1 1/4-in., 1.5-den.)	100% brt. viscose (1 5/8-in., 1.5-den.)
Spindles per frame	360	360	360	360	360
Ring diameter (in.)	2 1/4	2 1/4	2 1/4	1 7/8	1 7/8
Twist multiplier	3.01	3.47	3.43	3.36	3.67
Turns per inch	12.06	15.50	16.80	21.22	25.95
Hk. roving in creel (double)	2.0	2.0	2.0	4.0	4.0
Draft	16	20	24	20	25
Spindle speed (rpm.)	7,200	7,600	7,800	10,600	10,600
Traveler speed (ft. per min.)	4,240	4,476	4,594	5,194	5,194
Inches per min. delivered	598	490	464	499	408
100% hk. per hr.	1.188	0.972	0.921	0.99	0.81
Efficiency	90%	90%	90%	92%	92%
Actual hk. per hr.	1.07	0.875	0.83	0.911	0.745
Lb. per hr. per 100 spindles	6.68	4.38	3.46	2.28	1.49
Spindles per spinner	2520	2520	2520	2880	2880
Ends down per 1,000 spindle hr.	7.28	20.16	17.46	16.87	19.98

A VARIETY OF YARNS for weaving and knitting mills—nub, slub, and other fancy yarns as well as blends—are spun at spindle speeds up to 10,600 rpm. and front-roll delivery speeds of 500 to 600 in. per min.

NEW FRAMES Give This Mill Four Times As Much Yarn

Dionne Spinning Mills Co. finds that its 48 new 360-spindle spinning frames—

- **Net an average of 136 instead of 35 lb. per doff on yarns ranging from 12s to 60s (cotton system)**
- **Eliminate two-thirds of the former ends down, slubs, knots, and rewinding**

Air-suction cleaning attachment and overhead cleaning lighten spinners' clean-up tasks

By RICHARD C. SCOTT, New York Editor, TEXTILE WORLD

AN AVERAGE OF 35 lb. net per doff used to be the normal production per spinning frame at Dionne Spinning Mills Co. of St. George West, Beauce, P. Q., Canada, and the mill had trouble obtaining the quality of yarn it wanted.

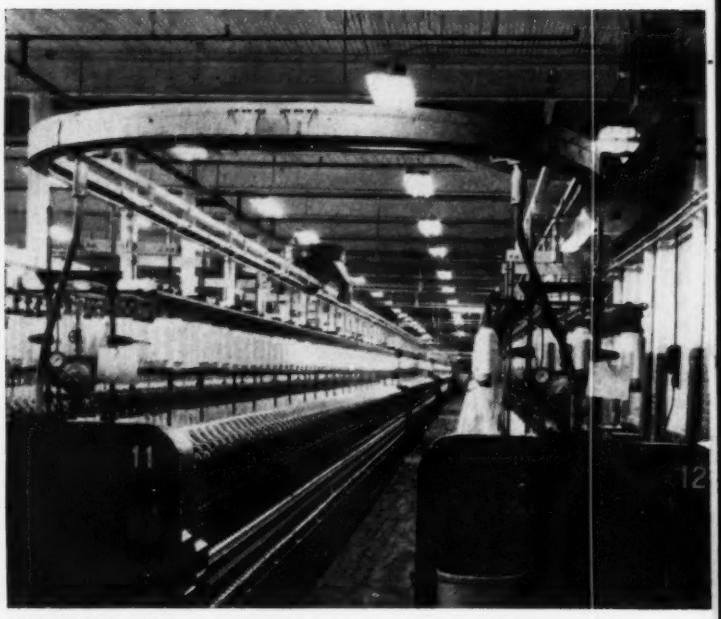
But today the mill is producing close to 70,000 lb. of high-quality yarn weekly on a two-shift, five-day-week basis, for an average of 136 lb. net per doff from 48 new 360-spindle Rieter frames.

The mill manufactures cotton, spun-rayon, and spun-acetate yarns and blended yarns with up to 50% cotton, nylon, wool, Orlon, and Dacron in staple lengths up to 2 in. Both weaving and knitting yarns are spun. Yet even with the wide variety of yarns being spun, the mill has found that the combination of the new frames, a Sulzer air-suction frame-waste collection system, and Parks-Cramer overhead cleaning has eliminated two-thirds of its frame cleaning, ends down, knots, gouts, and doffing and rewinding costs.

Spinning-Room Layout

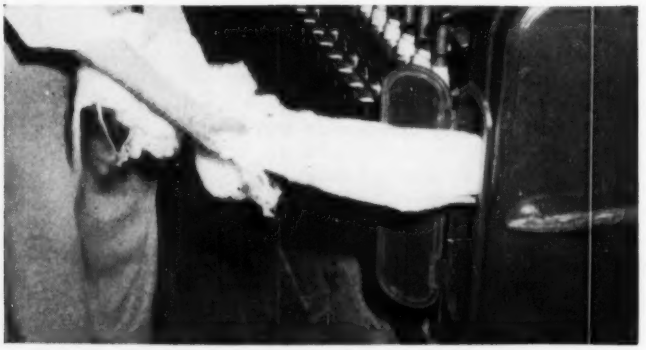
"Our spinning room is 79 ft. wide, 277 ft. long, and 14 ft. high," explained Jim Adams, general manager of the plant. "So we were able to get 12 frames across, four banks deep, to give us the 17,280 spindles we figured we needed to balance our production.

PIECING UP AN END is easier for the mill to train its employees to do correctly because of the individual-spindle brake that is operated by the frame-tender's knee. Note the overhead cleaner.

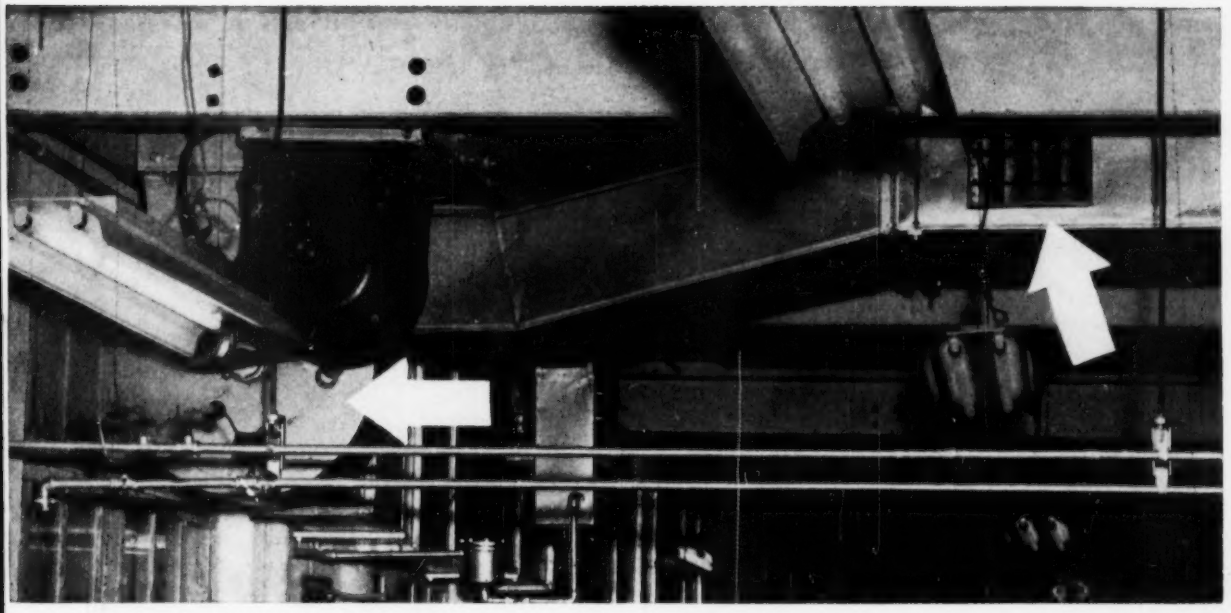


OVERHEAD CLEANER in combination with the air-suction frame-waste collection system has eliminated two-thirds of the former hand cleaning.

JAMES A. ADAMS, general manager of the mill, checks the operation of the frames daily with James Peloquin (left), superintendent, and Nicholas Gryndahl (right), assistant superintendent.



ADDITIONAL USABLE STOCK is obtained from soft roving collected through the air-suction system at the foot end of frames when an end breaks. Lint on frames and the amount of fly in the air have been substantially reduced since the installation of the system.



AIR-SUCTION-SYSTEM FAN AND EXHAUST (arrows) are out of the way to make tending and maintenance as easy as possible. There is a fan for every six frames to keep the air flowing softly and evenly all over the room.

The frames are 3 ft. 4⅛ in. wide and 58 ft. 4⅞ in. long, and our alleys between frames are 32 in. wide."

Mr. Adams also said he especially liked the frames because of several other features: the movable spindle rail with an 11-in. over-all traverse, the single antiballoon node rings that eliminate the need for separators, the air-pressure weighting of the top rolls, the knee-operated spindle brakes, and the underframe baffles that keep the air current caused by the cylinder from affecting the quality of the yarn being spun.

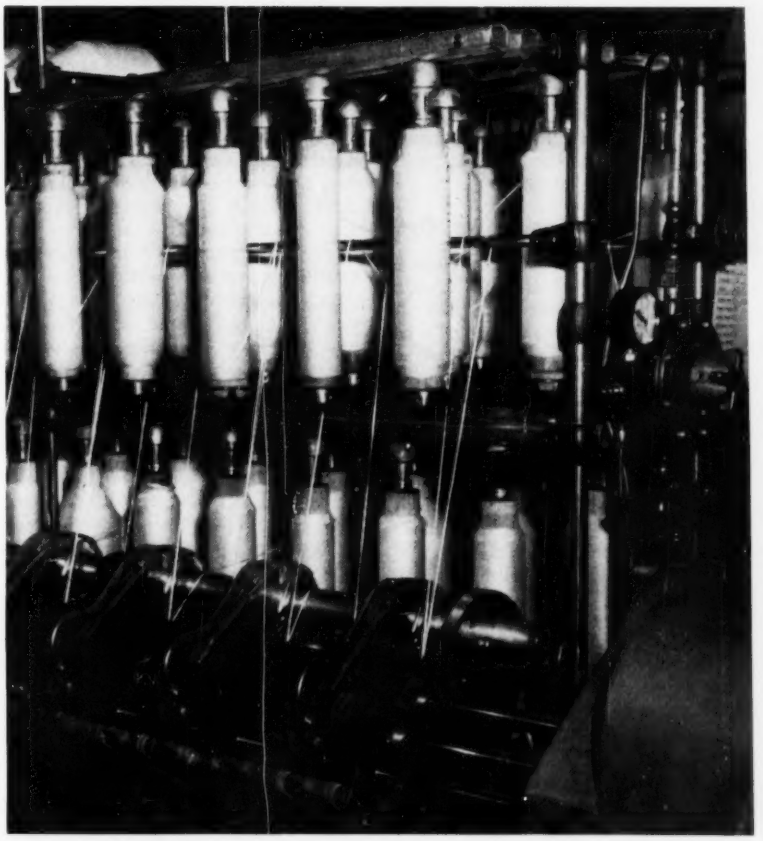
The mill uses 11-in. paper bobbins 1⅛-in. in diameter across the bottom.

The spinning-room workloads are set up so that there are two fixers for the 48 frames per shift. Spinners, tending an average yarn, will keep up 12 to 14 sides. Trainee spinners, according to Mr. Adams, soon learn to take on 1,000 spindles.

Doffing Is Rapid

Doffing is fast. There are six doffers (girls) per shift. When a frame is ready to doff, three doffers work on each side, each girl replacing 60 full bobbins with empty ones. Thus a minimum of frame production time is lost.

An air compressor for every 12 frames gives best results on the continuous air-suction frame-cleaning system. There is a circulating-air fan for every six frames to keep the air flowing softly and evenly all over the room.



DOUBLE-CREEL ROVING is the rule on the spinning frames; the management thinks that the quality of the resultant yarn is better. Creeling is easy because of the umbrella creel that eliminates nonproductive motions. Ball-bearinged skewers minimize sudden tugs and broken ends.

TYPE 42 ORLON STAPLE
Is More Heat-Stable, Dyeable

Offered only in staple form, a new Type 42 Orlon claims these advantages—

- **Less affected by heat treatments prior to dyeing**
- **More dyeable at lower temperatures with acid dyes; has better lightfastness and a wide range of brighter shades**
- **Better lightfastness with dispersed dyes**
- **Identification tints easier to remove**

FOLLOWING DISCONTINUANCE of production of Type 41 Orlon staple this year, a new Type 42 staple has been put into production by E. I. du Pont de Nemours & Co., Inc.

The Type 42 has essentially the same physical characteristics as the old type, but the dyeing properties and procedures are different. Techniques have not been perfected as yet, but so far as is known the new staple is much better for dyeing in the piece than the old staple was. Yarn- and top-dyeing techniques have not been explored sufficiently to make general statements about the superiority of Type 42 in these processes.

Copper Ion Dyeing—Acid Dyes

The rate of absorption of cuprous copper by Type 42 is much greater at any given temperature than by Type 41. This factor alone calls for more care in application technique. This factor, plus the fact that more dyes have affinity for Type 42 (and at lower dyeing temperatures), makes the range of shades obtainable on the new fiber much greater.

Use of hydroxylammonium sulfate, sodium bisulfite, or glyoxal for copper reduction is unchanged. Sodium bisulfite should be used only in closed dyeing systems, particularly if sulfuric acid is used, because evolved SO_2 escapes from open systems and causes loss of reduction power.

In the dyeing of piece goods at the boil, care must be taken to start reduction at a lower temperature than before. Hydroxylammonium sulfate should be added in small increments. Further retarding of absorption rate can be effected by use of sulfuric acid and surface-active agents. If redox equipment is available, the absorption rate can be further retarded by stepping up the millivolt conditions. Copper requirements for Type 42 are about the same as for Type 41. Carriers or dyeing assistants should find less use on the new staple in dyeing heavy shades.

Pressure dyeing of Type 42 is apparently the best way to obtain optimum fastness to cross-dyeing. Dyeing under pressure gives better color yield and also permits the use of less-expensive dyestuffs and less reducing agents for heavy shades.

In pressure dyeing of raw stock or top, care must be taken to obtain level distribution of copper and dyestuff before the dyebath is brought up to a high temperature. Though this precaution is a good one to take in any case, it is essential with Type 42 because the new staple tends to pack and pull away from the sides of the machines more than Type 41 does.

Dyeing With Acetate Or Dispersed Dyes

The major advantage of Type 42 over Type 41 as regards dispersed dyes is in better uniformity of color. Fastness to light is somewhat superior. The depth of shade obtainable with this class of dyestuffs is still limited. High-temperature dyeing under pressure gives greater depth of shade, but filtration of color is still a problem under study. Use of dyeing assistants helps color build-up but adversely affects fastness to light.

Dyeing With Basic Colors

Basic colors will dye on Type 42 Orlon staple even after heat treatments. Basic dyes give good fastness to light and to washing when a proper selection of old-line colors is used in conjunction with some new Du Pont basic dyes that have been recently developed.

Dyeing of basic colors at the boil or under pressure gives best results when a small amount of sodium acetate and acetic acid is used. Rate of color absorption is slow at first; but after the first half hour, build-up continues at an acceptable rate—better than on Type 41. Medium shades are possible at the boil; heavy shades must be made under pressure.

Piece Dyeing

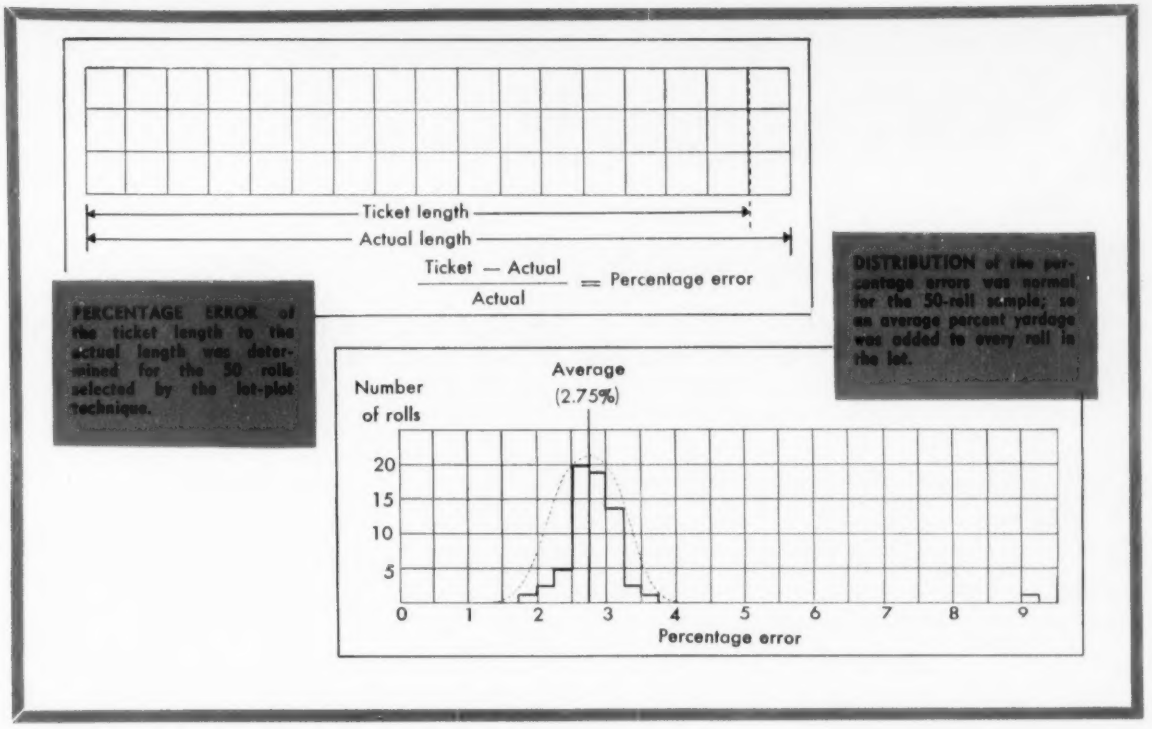
Knit goods made from the new staple have shown good level-dyeing characteristics in paddle-type machines. Pastel to medium shades can be dyed without resorting to the cuprous-ion technique.

Woven fabrics of 100% Type 42 staple will dye levelly in light shades with acetate colors. Mixtures of acetate and basic dyes have been suggested for medium shades. Careful selection of colors must be made to obtain level dyeings in such light shades. As usual, special fabrics and special shades require modifications of technique and cannot be covered all-inclusively.

Blends with rayon or cotton can be dyed satisfactorily with dispersed dyes and directs in a one-bath method for light shades. For medium shades, with a large percentage of yellow and orange components, basic dyes must be added to give satisfactory fastness to light and sublimation. Deep shades are best dyed in a two-bath procedure: the Orlon is dyed first by any of the methods suitable, and another bath to dye the cellulosic fiber follows. If the cuprous-ion method is used first on the Orlon, a sequestering-agent scour must be given to remove copper from the rayon or cotton.

Wool blends with Type 42 can be dyed with basics for the Orlon and acid dyes for the wool in a one-bath procedure. Solid unions, tone-on-tone, and contrasting effects are obtainable. Basic dye staining on the wool can be controlled by long boiling after exhaustion of the color from the dyebath. Use of acid and nonionic aliphatic detergents will hasten the transfer of basic dyes from the wool to the Orlon.

Adapted from a paper recently delivered before the Philadelphia Section, AATCC, by Dr. P. L. Meunier, at Wilmington, Del.


Ticket length
Actual length
Ticket — Actual / Actual = Percentage error
PERCENTAGE ERROR of the ticket length to the actual length was determined for the 50 rolls selected by the lot-plot technique.
DISTRIBUTION of the percentage errors was normal for the 50-roll sample; so an average percent yardage was added to every roll in the lot.
Number of rolls
Average (2.75%)
20
15
10
5
0 1 2 3 4 5 6 7 8 9
Percentage error

How Bigelow-Sanford Found 2,000 Yd. of "Lost" Carpet

- **A year-end inventory showed that 2,000 yd. of carpet were "lost" between the weave room and the warehouse**
- **An engineering study located the trouble spot—a slipping measuring wheel on an inspecting machine**
- **Lot plot, a new statistical tool, was used to recover the yardage without remeasuring all the rolls**

By A. G. KLOCK and C. W. CARTER Bigelow-Sanford Carpet Co., Inc.

MODERN TECHNIQUES of statistical quality control were put to a novel use in locating many hundreds of square yards of "lost" carpet at Bigelow-Sanford Carpet Co., Inc. A year-end inventory revealed the shortage, engineering study uncovered the cause, and statistical quality control pointed out the most economical solution to the problem.

Inventory Discovered Shortage

At the end of 1949, a physical inventory of finished goods in the warehouse revealed the shortage of over 2,000 yd. of one grade of carpet. This grade was one of Bigelow's newest developments and represented the first product to be manufactured under statistical quality controls from beginning to end. It was only natural, then, that the mill should turn to quality control for the answer to this problem. The engineering approach was considered and then employed to solve the problem.

Study Uncovered Cause

These six steps were taken to find out why the shortage occurred.

1. From inventory records, the number of rolls counted was checked against the number that should have been on hand. These two figures were in very close agreement, an indication that no rolls had been mislaid or otherwise lost.

2. Several rolls about to be sent to the warehouse were unbaled and measured with a steel tape. These measurements were then compared with the yardage figures shown on the invoiced tickets, and ticket yardages were about 3% less than actual yardages. As a check on these measurements, the missing yardage was taken as a percent of the total invoiced yardage for the year; but this figure was enough different to raise a question as to the reliability of this small sample.

3. The operation during which yardages were entered on the invoiced

(*Continued on page 212*)

ON THE BRADFORD SYSTEM—

Use Low Draft, Tension, Twist For Processing NYLON BLENDS

- **Tight winding is always injurious when nylon is involved**
- **A minimum of twist should be used, especially on machines containing pins or porcupine rolls, to reduce abrasion and wear on the metal parts**
- **It may be preferable in some cases to use shorter drafts and an extra drawing process rather than risk damage to machines**

NYLON STAPLE, with a tensile strength of about 4½ grams per denier, has a breaking strength of 28 grams as compared with 10 grams for the equivalent wool. Combinations of the two fibers, as in a sleek worsted fabric, have aroused the interest of consumers and will be increasingly important to mills.

Crimp

In nylon staple, the crimp need not approximate that of wool; the more and finer the crimp in the nylon the better, up to a point, since it tends to increase the spinnability and the bulk of the yarn.

The exception to this rule may be in cases where a small percentage of fine, long-staple nylon is mixed with fine wool merely to increase the strength of the yarn. In that case uncrimped nylon of comparatively long staple may be used since it tends to form a core inside the yarn that provides strength, while the wool holds the yarn together, covers the nylon, and forms the surface to make a uniform-dyeing piece of goods.

Extracted from the chapter "Spinning Nylon Staple on the Worsted System," from the new book, *Nylon Technology*, by Karl H. Inderfurth (McGraw-Hill).

Selecting the Correct Nylon Denier and Staple Length

In the selection of nylon staple for use on the worsted system, the drafting operation throughout spinning must be kept in mind.

For example, drawing rolls are kept apart at a distance roughly equivalent to the diameter of the coarsest fiber. Consequently, fibers of a much smaller diameter are not securely held and have a tendency to slip and to create thick-and-thin places in the same roving.

Thus fibers of similar diameter should be chosen to obtain good, even yarn.

Similarly, staple lengths must be within certain bounds. Best results are obtained from nylon staple that is close to the average staple length of the wool to be processed at the same time, since longer fibers are likely to be stretched or broken and shorter fibers will be combed out or will cause uneven yarn because of lack of control in drafting.

Moisture Regain

Of interest to the spinner is the moisture-regain situation. The regain for wool is the highest, while that for nylon is the lowest, of any commonly used textile fibers. Both fibers lose strength and have increased ease of stretch under the influence of moisture.

Both wool and nylon develop a great deal of static electricity when processed in an excessively dry atmosphere. Consequently, good control of temperature and relative humidity is imperative in processing wool and nylon staple.

A special static-resistant finish applied by the manufacturer to nylon staple and the usual oiling of wool in spinning on the Bradford system tend to overcome the static trouble. Some manufacturers have also found static eliminators helpful.

Unless static electricity is well under control, nylon and wool mixtures cannot be spun successfully.

The Bradford System

A Bradford carding and combing set, suitable for production of top from fine wool, 56s to 70s or ¾-blood to fine, might be set up as follows:

- 6 double worsted cards (60 in. wide)
- 1 backwasher (two bowls and dryer)
- 3 strong gill boxes (oiling motion on first box)
- 1 comb baller
- 6 Noble combs
- 6 finisher gill boxes

This set will produce 16,000 to 20,000 lb. of top in a two-shift week of 80 hr., just about the production of a wool-scouring set running one 40-hr. shift.

Carding the Nylon

After the bales of nylon staple have been opened, the fibers should be put

through an opener, and then the stock should be allowed to come to condition.

A clean double-worsted card with preopener or a three-cylinder card may be used for carding. Deep setting of the fancy, fine clothing on the workers, and reduced carding speeds will help to attain good carding.

On the worsted system, nylon and wool are generally carded separately. In some instances they are blended on the card.

Nylon sliver may also be combed separately and mixed with the combed wool by gilling prior to drawing. However, better mixing results are obtained by gilling the nylon sliver with the wool sliver prior to combing and then combing the fibers together.

For the finest yarns, the wool may be run through the comb, then mixed with the nylon sliver on a gill box and combed again. In this way the nylon is combed only once, but the wool is combed twice.

Since nylon staple is not carded as much as the wool and a clean card is employed, backwashing is not necessary for nylon.

Gilling

On the first gill box, about 3% of oil is mixed with the wool top. This oil, together with conditions of about 70° F. and 65% r.h., keeps static electricity to a minimum.

It must be remembered here that wool absorbs moisture rapidly, 16% being usually left in the stock after backwashing, while nylon does not usually absorb more than 4 or 5% of moisture. Since the nylon surface is naturally smoother and the humidity recommended for the wool is higher than the 55% r.h. used for nylon alone, the oiling and the first gill box may be omitted for the nylon.

The nylon sliver as it comes from the card may be run in with the wool at the second gill box. When the nylon sliver is gilled and combed by itself, only two gill boxes before combing are needed, and the humidity should be kept at 55% r.h.

However, when the two fibers are processed together, the humidity should be adjusted to meet the requirements for wool. In some instances the humidity should be adjusted to the largest fiber content.

The arrangements of drafts and fallers in the gill boxes depend on the type of wool and the denier of the nylon to be processed. Since nylon staple is a comparatively new material, the settings recommended for acetate staple can be used if specific instructions for nylon cannot be obtained. These serve well as a basis for further experimentation in the mill.

How To Determine What Percent of Nylon Is in a Blend

Occasionally it is desirable to check the percent of nylon present in a blend containing cotton, wool, or rayon. The principal reagent used is formic acid (90%). Extreme caution must be used in handling this acid.

The determination can be made on either fiber or fabric. Fiber should be fluffed out and loosely put into the weighing dish. Fabric should be prepared in small ¼- to 1-in. squares.

Procedure

1. Remove in an oven all traces of moisture from a clean weighing dish and its lid, and then weigh them on an analytical balance.
2. Place approximately five grams of the blend in the dish; and put the dish again in the oven, at 210 to 220° F., with the lid removed.
3. Allow the sample to dry at this temperature for 3 hr.
4. Remove the dish with the lid in position, and place it in the dessicator to cool.
5. Remove and weigh the dish to get the net dry weight of the sample.
6. Place the weighed sample in a 250-ml. Erlenmeyer flask, and add 100 ml. of formic acid (90%).
7. Insert a stopper in the flask and shake gently for 2 hr. Let the fibers settle.
8. Remove the stopper and decant the clear liquid in the flask into a glass beaker. Make certain that no fibers are poured into the beaker.
9. Add another 100 ml. of formic acid (90%), replace the stopper, and shake gently for 1 hr.
10. Filter the solution through a previously prepared Buechner funnel, set up for use on a 500-ml. vacuum filter flask with a vacuum line attached.
11. Make sure no nylon is left in the 250-ml. flask. Check the final formic-acid washing of the flask by adding a drop of it to 25 ml. of water. If the water becomes cloudy, additional washings are needed.
12. Replace the 500-ml. filter flask with a new one, and wash the residue in the Buechner funnel with distilled water.
13. Remove the funnel, and place the residue in a 212 to 220° F. oven for 3 to 4 hr. Then place the residue in a dessicator, cool, and weigh on an analytical balance.

$$\frac{\text{Weight of material before extraction} - \text{weight of material after extraction}}{\text{weight of material before extraction}} \times 100 = \% \text{ wool in the blend}$$

$$100 - \% \text{ wool} = \% \text{ nylon in blend}$$

The draft obtained in gill boxes between the front and the back rollers is calculated in the same manner as any other draft on drafting assemblies.

Number of Doublings

The number of doublings and the drafts used prior to combing vary considerably. Assume that, in a setup suitable for ¾-blood wool, 18 card slivers are run into the first, or oiling, gill box and come out as a 9-oz. sliver. This step will be omitted for the nylon.

Of the slivers from the first gill box, six may be run into the second gill box; once more a 9-oz. sliver results. Again, six of these may be run into the third gill box. The result is a sliver that is then ready for the comb.

Generally, the finer the wool, the fewer doublings are needed for evenness. In the above example there are 6 x 6=36 doublings in the second and third gill box.

Suppose a nylon sliver of 9 oz. is run into the second gill box in place of one wool sliver. The result would be 1/36, or 2.8% of nylon in the mixture. By varying the weight of the nylon sliver and the number of slivers run in, you can obtain any desired percentage.

Combing

In combing nylon or wool-nylon mixtures, certain precautions must be taken.

The Noble comb does not take the sliver directly from the cans or balls produced by the preceding gill box but requires four of these slivers to

(Continued on page 196)

Program — MEDIUM-SIZE-

Maintenance Duties Are Diversified

One over-all supervisor with adequate working foremen, well-trained mechanics, one clerk, and one stock man are all the personnel needed to keep a maintenance department operating efficiently in a medium-size plant. Features of such a program are—

- **Centrally located shops**
- **New equipment and machines**
- **"Maintenance on wheels"**
- **A budget for planned operations**

By A. D. BUSCHMAN, Plant Engineer, Perfection Stove Co.

The story on this page recommends the ideal maintenance practices for all industries. We selected Brookside Mills (story on opposite page) as an example of how maintenance programs are organized in medium-size textile plants.

Features that make Brookside's program compare favorably with that of the ideal program are: its organization is the direct-line type, the shops are all centralized, and each maintenance department is headed by a working foreman.

MEDIUM-SIZE PLANTS enjoy a favored position in plant-maintenance organization because they have enough maintenance manpower to handle work efficiently and yet are not so large that coordination problems and loss of the personal touch are serious handicaps.

The problem is to develop the organization and provide sufficient paper work for efficient operation and still keep the operating costs and overhead at realistic levels.

The four elements of organization are:

1. Personnel structure
2. Equipment
3. Paper work
4. Procedures

The duties of each employee in medium-size plants are diversified, and each man and supervisor covers more ground than men in larger plants. By the same token, the medium-size maintenance department needs the right kind of organizational plan to utilize its manpower to the best advantage.

Although a department of this size cannot afford a large number of clerks, staff engineers, craft foremen, etc., it can, with intelligent compromises, get most of the benefits of such an organization and yet keep the expense down so that top management will support its program.

A Supervisor Directs Working Foremen

A supervisor and an assistant are needed to head the department. The supervisor can also be the plant engineer and thus spread his usefulness and reduce the charge against maintenance.

Usually it's too expensive to have a foreman for each craft, but you can have working supervisors handle such problems as scheduling, planning, accounting, etc.

There must be at least one clerk—two are better—for staff assistance to the maintenance foreman.

The best basic organization is the line type with authority flowing down from the top. Weekly meetings with the working supervisors to review past work and discuss future plans soften the impact of line authority and let every man contribute his ideas. In effect, the working supervisors are staff advisors who help formulate the department plans and policies. There is a strong incentive to meet schedules when every man in the supervisory group has taken an active part in the initial job decisions and plans.

The maintenance department should report to the same management men that the production departments report to. This practice reduces the tendency for production-minded executives to override basic maintenance principles for the sake of immediate production demands.

Train Your Men and Centralize Your Shops

Men must be well trained so that they can step up to the next job in case of promotion, sickness, or expansion of the department. Smooth operation of the department depends on the employee's understanding of the workings of the department.

Well-trained and properly supervised maintenance mechanics still cannot function efficiently without proper housing, tools, and equipment.

If the maintenance department is split up with a part in one corner and a part some other place, the supervisor, group leaders, clerk, and timekeeper are apt to spend a large portion of their time running back and forth between the various shops. An area large enough for all the maintenance machinery, tools, stock crib, office, workbenches, and miscellaneous equipment is the answer for medium-size maintenance departments.

(*Continued on page* 204)

Based on a paper presented at the recent fourth annual Plant Maintenance Show and Conference in Cleveland, Ohio.

Brookside Has Direct-Line Organization

A direct-line personnel structure, centrally located shops, and adequate working foremen enable the maintenance department of this large mill to make most major building repairs, make normal maintenance repairs to equipment, and install all new equipment and machinery at 3% of the total plant-operating cost. Unusual maintenance features at Brookside Mills are—

- **A plant to manufacture welding gas**
- **A well to furnish cold water to the compressors**
- **A metallizing process for shafts and loom take-up rolls**

By NORMAN GARLINGTON, Superintendent, Brookside Mills

THE MAINTENANCE PROGRAM at Brookside Mills, Knoxville, Tenn., is set up to make most major building repairs and to install new machinery. The mill, which has 65,000 spindles and 1,046 looms, weaves 15 to 20 million yd. of staple-rayon and cotton fabrics a year. Maintenance costs average 3% of the total operating cost for the mill.

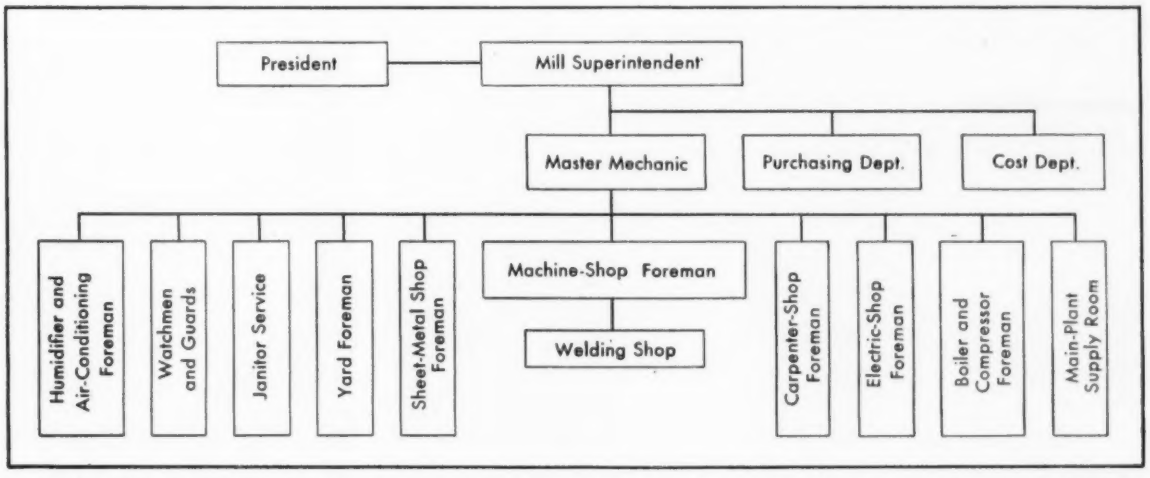
Organization Is Direct

Direct-line reports are passed between the mill president and the superintendent. The superintendent has only three direct contacts for reports to him from the mill-maintenance program. The reports come from:

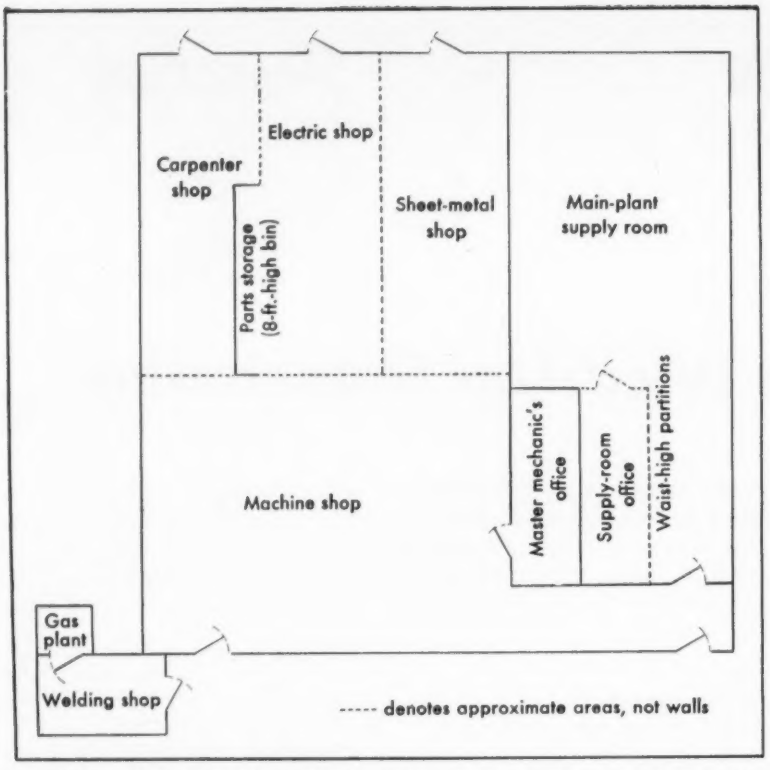
1. *The purchasing department,* which shows the cost of supplies and equipment for proposed improvements and for usual maintenance work
2. *The cost department,* which shows the actual labor, machinery, and machine-parts costs for projects completed and the over-all costs of actual plant maintenance
3. *The master mechanic,* who reports daily progress on work being done to the buildings and equipment

The master mechanic is directly responsible to the superintendent for all building repairs (roofs are usually re-covered by outside contractors, but they have been re-covered in the past by the maintenance department), all electrical work, all carpenter work, air-conditioning and humidifier maintenance, machine-shop work, boiler and compressor upkeep, yard service, janitor service, watchmen and guard protection, and the main-plant supply room.

The master mechanic has working foremen, where needed, to head departments. These foremen train new



THIS STREAMLINED ORGANIZATION begins at the president, comes down through the mill superintendent, and then extends throughout the maintenance department proper to insure low-cost operation at Brookside.



CENTRALLY LOCATED SHOPS, combined with the main-plant supply room, make it easy for the master mechanic to check often with his working foremen to keep maintenance performance up.

men when they are needed. For example, two young men are being trained as machinists all the time in the large machine shop.

Machine Shop Is Complete

The machine shop is equipped with all the machines necessary to do any type of general machine-shop work. For instance, one lathe is set up to metallize take-up rolls for looms and is also used to build up worn surfaces on all types of shafts.

The welding shop is located just outside the machine shop, and no time is lost in transporting materials and broken parts back and forth. A Torchweld portable acetylene generator enables the shop to manufacture its own welding gas.

A hood over the welder's workbench draws off the burned gases and protects the workers. The hood is made from the lengthwise half of a steel dye drum. A 15-in. sheet-metal exhaust pipe connects to a hole in the center of the dye drum and extends through the roof of the building. A fan in the pipe just over the hood forces the gases out through the roof.

Loom parts such as broken shipper levers and picker-stick guides are welded in the shop. Cloth and yarn trucks are also fabricated in the welding shops.

The sheet-metal department maintains all spinning and comber cylinders, makes ducts for the air-conditioning system, and maintains all ducts throughout the mill.

Employees of the carpenter shop make minor roofing repairs and all building repairs and maintain the wood parts on all machines.

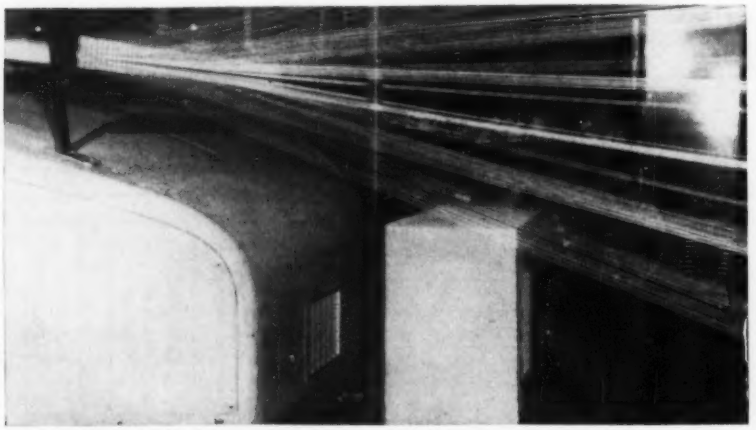
How the Electric Shop Is Organized

The electric-shop foreman reports to the master mechanic. His shop is next to the machine shop and near the master mechanic's office.

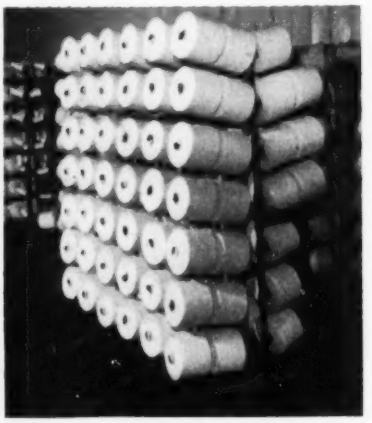
The electric-shop foreman's duties include the care of all electric motors and switches in the mill. Motors of 25 to 125 hp. are inspected frequently to insure against damage.

Loom motors are not inspected and are not serviced except to clean the bearings and oil wells. Oilers report hot bearings, and the motors are checked immediately by an electrician. If the trouble does not appear to be serious, the motor is torn down and corrected over the week end. Motors that fail are removed during

(*Continued on page 227*)



WARPER GENERATOR was removed from the body of the warper and placed in a unit back of the warper by the maintenance department. The reduced vibration resulted in less brush trouble and less maintenance.



MILL SUPPLIES such as this 168-cone truck are fabricated right in the machine shop. Yarn waste has been substantially reduced.

Timely CARDING Topics Tackled at Georgia TOE

► Over 250 operating executives representing almost 1½-million spindles in Georgia mills met recently at Georgia Tech to discuss latest developments in carding and spinning

► Answers to questions pertaining to carding are digested here for quick reading. The spinning information will be summarized in our July issue.

Oiling Raw Cotton

There was practically unanimous approval of the addition of oil to cotton in opening and picking. More mills apply the oil in some phase of opening than in picking, but success is reported in both places. Dust and fly, according to 18 mills out of 19 that commented on this subject, are always reduced; and loading of picker screens or cards is not a problem when oil content is kept low.

The percentages of oil vary from 0.1 to 2.0%, but most mills reported the addition of 0.2%. Cottons used ranged from 1-in. SGO to 1 5/32-in. SM.

Opening and Blending Cotton

Blending feeders or hopper feeders are used by most mills, but the combinations that follow this initial opening vary widely.

The number of bales per mix varies from 6 to 70, but most mills lay out about a 24-bale mix.

Picker production varies from 300 to 410 lb. per hr., and the average is about 335 lb. per hr. The best setback record reported was 0.1% from a mill on a 30-bale mix of flat bales. One mill rejects 5% of its laps if compressed and flat bales are mixed. Another mill has 4½% setbacks from a 24-bale mix of compressed cotton opened on a bale breaker.

Although a few mills have no trouble when compressed and flat bales are run in the same mix, most mills agree that the hopper feed should be adjusted for the compressed bales. A 2-in. layer is peeled off the higher-density bales instead of the usual 4-in. layer. Best practice also appears to indicate that separate hoppers should be used for each type of bale to insure greatest accuracy in feeding.

Humidity in Opening and Picking

About half the mills that replied on this subject have humidity control in opening or picking, or in both. Relative humidity averages 50%. No significant cost figures were reported. All the mills that do humidify in these areas consider that the results justify the cost.

Blending and Tinting Synthetics

Mill F has a special blending room for synthetics with a bale breaker, conveyor apron, condenser, rake distributor, blending hopper, conveyor apron, and bale press. Tinting is done on the bale breaker.

Mill I uses Fiber Meters. The batches run 1,500 to 2,000 lb., and blend accuracy must be ±1% for fill-

Table 1
Summary of Mill Reports on Waste in Opening and Picking

Grade and staple length	Percent waste		
	Opening	Picking	Total
SGO, 1 in.	3.20(%)	1.75(%)	4.95(%)
LM, 15/16 in.	2.24	2.26	4.50
LM, 15/16 in.	3.00	2.00	5.00
LM, 1 in.	2.38	1.00	3.38
LM to M, 7/8 to 1 1/8 in.	1.26	1.00	2.26
SLM, 15/16 in.	3.77	1.62	5.39
SLM and M, 1 in.	1.10	0.67	1.77
SLM, 1 in.	1.67	1.03	2.70
SLM, 1 in.	1.55	1.85	3.40
SLM, 1 1/16 in.	1.03	1.02	2.05
M and SLM, 7/8 and 15/16 in.	2.06	0.54	2.60
SLMB and M, 1 in.	1.29	0.75	2.04
SLMB to M, 1 in.	—	—	4.14
M, 15/16 in.	1.87	0.95	2.82
M, 15/16 and 1 in.	2.24	2.26	4.50
M, 1 1/32 in.	1.58	0.84	2.42
M, 1 1/32 in.	0.95	0.45	1.40
M, 1 1/8 in.	1.52	1.24	2.76
Egyptian, 1 13/32 in.	0.45	1.70	2.15
—	5.17	1.26	6.43

BOB LAWSON, plant manager, Chicopee Mfg. Corp., Gainesville, led the discussion on carding. John Alford, superintendent, Covington Mills, Covington, was elected to the executive committee for a 2½-year term.

Table 2
Shirley Analyzer Results of Waste at Mill U

	Total waste (%)	Foreign matter in waste (%)	Fiber in waste (%)
Opening:			
Hopper drawers	.09	65.7	34.3
Lattice opener	.57	58.6	41.4
Superior No. 1	.57	59.3	40.7
Superior No. 2	.44	50.5	49.5
Total	1.67		
Picking:			
Hopper drawers	.02	63.4	36.6
Breaker section	.67	74.4	25.6
Blending reserve	.11	63.5	36.5
Finisher section	.23	78.6	21.4
Total	1.03		

COTTON USED by this mill is 1-in. SLM. Beaters in the breaker section are two-blade, in the blending reserve six-blade, and in the finisher section Kirschner. In the breaker section the beaters are set ⅜ in. and blows per inch are 10.6. Corresponding data for the finisher section is ⅛ in. and 28.8 blows.

ing ±2% for warp. Although Mill I didn't report where it did its tinting, it recommended that tinting be done early in the process and that the tinted stock be dried before picking.

Mill Y feeds by hand from four bales into a hopper feeder where tinting is also done. Stock is then aged two to three days before it is run on the picker. Blending is accomplished on a setback picker.

Mill FF lets bales of synthetic fibers bloom at least two hours, then runs the stock through its regular cotton equipment. Tinting is done on the picker.

Mill II blends from a sandwich mix and tints in the hopper feeder.

Dust Pit vs. Air Filters

Nine out of 10 mills that expressed an opinion on this subject prefer air filters to a dust pit. Fan speeds generally had to be increased to maintain lap uniformity, but the advantages—better laps, less dust, better temper-

Table 3—How Do Your Nep Standards in

Grade and staple	Sliver wt. (grains per yd.)	Card production (lb per hr.)	Flat speed (in. per min.)	Cylinder speed (rpm.)	Flat strips (%)
SLM, 15/16 in.	60	15.9	2.6	168	2.3
SLM, 15/16 and 1 in.	62	16	3.0	168	2.7 inc. cyl. & doffer
SLM, 1 in.	50	10.0	2.8	175	3.2
SLMB and SLM, 1 in.	58	9.8	2.1	165	2.0
SLMB, 1 in.	55	8.5	3.5	165	—
SLMB, 1 1/32 in.	50	9	2.5	165	2.5
SLMB, 1 1/16 in.	54	10.0	3.0	172	2.8
M and SLM, 7/8 and 15/16 in.	65	—	3.5	165	2.1
M and SM, 1 in.	54	6.3	2.8	168	3.5
M and SLM, 1 in.	57	—	—	165	2.0
M, 15/16 and 1 in.	62	8.5	3.0	168	2.5
M, 15/16 and 1 in.	62	14.1	3.0	168	2.5
M, 1 in.	60	8 to 13.5	2.6	—	1.5
M, 1 1/32 in.	52	10.0	1.8	165	2.0
M, 1 1/32 in.	62	8.5	3.3	165	3.2
M, 1 1/32 in.	62	11.5	3.3	165	3.2
SM, M, and LM, 15/16 in.	70	17.8	3.3	165	2.3
SM, 1 1/32 in.	60	7.7	2.3	168	2.8
Egyptian, 1 13/32 in.	45	4.0	3.5	—	4.3
SM, 1 7/32 in.	44	5.0	3.5	168	4.0
4-42, 1 3/16 in.	50	3.5	4.5	165	5.0

ature and humidity control, and reduced fire hazard—were well worth the trouble.

One mill changed the picker drive from the ratchet to the chain type to improve lap uniformity when filters were installed.

High Card Speeds

Very few mills reported results with speeded-up carding, but the reports of three mills indicate that some success is being attained.

Mill FF. Card production was increased from 15.71 to 25.54 lb. per hr. on 1⅛-in. SGO cotton. Lickerin speed went from 517 up to 818 rpm., and neps per grain went up slightly, from 4.6 to 5.3. Evenness was improved slightly—from 15.4 down to 14.6%. Skein strength of 10s yarn went up from 169.5 to 172.9 lb.

Mill W. Card production remained at 7.7 lb. per hr., but neps per grain went from 5.6 down to 4.7 on 1 3/32-in. SM cotton. Evenness and yarn strength were unchanged, but there was an increase in fly.

Mill E-1. Production is now 16 lb. per hr., and neps are up about 2%. The stock is 1⅛-in. SLM. Yarn strength is the same, and maintenance costs are no higher; but grinding, because it is based on pounds carded, is now more frequent.

Antifriction Bearings

Twelve mills responded on this subject, and all of them are pleased with antifriction bearings for the lickerin. Both types of antifriction bearings received satisfactory reports, but ball bearings appear to have the edge in acceptance. No one had tried antifriction bearings on the feed rolls. Two mills had tried them on the cylinder, and one reported that the ball bearings were still on but that no maintenance records had been kept.

Advantages given for antifriction lickerin bearings were better quality, fewer neps, reduced maintenance cost, no oil spots, and higher lickerin speeds.

Uniformity of Drawing Sliver

Replacement or reconditioning of old drawing frames has been the most frequently used method of improving drawing-sliver uniformity, according to the mills that reported on this subject. Metallic rolls appear to have been selected more frequently than any other type, but some cushion rolls are giving excellent results.

At Mill L, both breaker and finisher drawing is running at 210 ft. per min. and is producing 55-gr. sliver with eight ends up. The frames are four-roll with steel top rolls.

To improve drawing, mills have:

Put in new gearing
Replaced eccentric rolls
Lined and leveled rolls
Replaced bad steel rolls
Buffed top rolls
Removed backlash in gears

(*Continued on page 264*)

Carding Compare With These?

Settings		Stripping cycle (hr.)	Grinding cycle	Screen	Nep standard	
Flats	Doffer to cylinder				Per grain	Per 100 sq. in.
0.010	0.007	—	600 hr.	Perforated	10.0	—
0.010 front 0.012 back	0.007	144 (cylinder) 2.7 (hand)	3,072 lb.	Rib	—	30 to 50
0.010	0.007	2.7	240 hr.	Rib	—	55
0.009 front 0.010 back	0.007	three times a week	Metallic	Rib	—	24
0.010	0.007	2.7	280 hr.	Perf. and grid	—	30
0.011	0.007	4 (vacuum)	220 hr.	Rib	17.5	—
0.010	0.007	3	360 hr.	Rib and perf.	—	40 max.
0.010 front 0.012 back	0.007	24 (doffer)	288 hr.	Grid	—	40
0.010	0.007	2.7	2,800 lb.	—	8.5 to 10.5	—
0.010	0.005	weekly	Metallic	Perforated	—	38
0.009	0.007	2.7	222 hr.	Perforated	—	25
0.009	0.007	2.7	222 hr.	Perforated	—	32
0.010	0.007	continuous	(2,672 doffer & cyl:) 668 (flats)	Rib	—	35
0.010	0.007	4	240 hr.	Bar	—	28
0.010	0.007	4	384 hr.	Rib	8.1	—
0.010	0.007	4	384 hr.	Rib	13.3	—
0.010 front 0.012 back	0.007	2.0	308 hr.	Perforated	6.5	—
0.010	0.007	3	9 days	Rib and perf.	5.0	—
0.007	0.010	2.7	360 hr.	Rib	—	15
0.009	0.007	2.7	288 hr.	Regular	—	—
0.009	0.007	2.7	3 mo.	Rib	—	—

This New WEAVE ROOM *Does Everything But Run Itself*

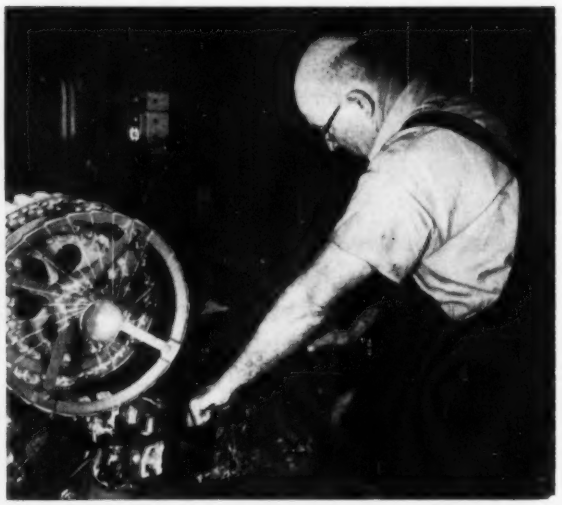
▶ Clinchfield Mfg. Co., Marion, N. C., built a new weave room, bought 300 new X-2 looms, and modernized 600 old ones. The building is almost self-cleaning, the filling is quickly handled from the central spare floor, and the looms are laid out so that they can be easily warped.

By **RICHARD B. PRESSLEY**
Assistant Editor, TEXTILE WORLD

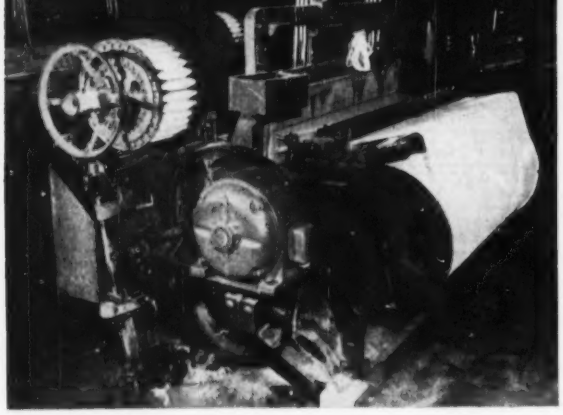
CLINCHFIELD MFG. Co. has just finished spending $1,500,000 on its No. 1 and No. 2 plants at Marion,

WEAVING

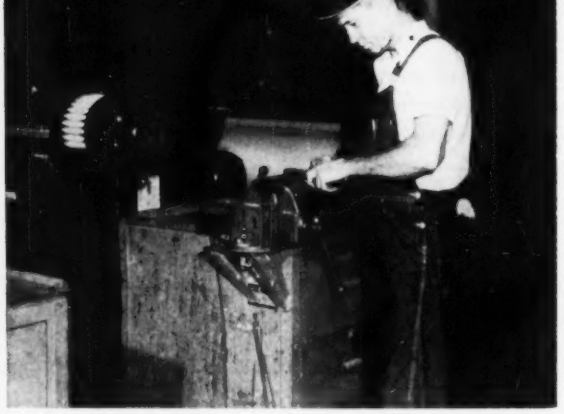
AN ALUMINUM LAY on this 46-in. X-2 loom is one of several features that make the loom ideal for weaving Clinchfield fabrics. Loom-parts replacement costs are reduced. W. R. Loudermilk, loomfixer, is making an adjustment to the lay.



THE DIEHL DRIVE on X-2 looms has helped increase weave-room production because little work has to be done to the drive to keep it operating. Leonard Broom, loomfixer, has removed the guard and is turning the transmitter gear so that wear on the gear will be equalized.



INDIVIDUAL MOTOR DRIVES improved the appearance of the E-model looms and added to the weavers' control in starting up looms. Spring-type crank arms reduce warp damage at slam-offs and reduce wear to the crankshaft. Looms were cleaned and repainted before they were rebuilt.



ALL-METAL WORKBENCHES for loomfixers are strung along the center spare floor of the weave room and are easily accessible to each loomfixer. Tools are kept in drawers, and no tool boxes spoil the neat appearance of the weave room. Fred Crosby is fitting a feeler lifting lever in the vise.

N. C. Most of the money went into the No. 1 plant, where a lot of it was spent on a new weave room.

Machinery in the entire plant was laid out to route the yarn straight through each process without any backtracking. Filling handling in the weave room is an example of the efficient materials handling throughout the plant.

Filling Is Handled Only Once

Spinning frames for filling are located at one end of the weave room. Bobbins of filling are doffed into metal baskets; and, when full, the baskets are slid off the doffer's truck onto a metal rack.

A weave-room filling hauler transports several of the baskets at a time to a centrally located spare floor in the weave room and places them on another metal rack.

The batteryhands exchange the empty baskets from their trucks for full ones from the rack. There is no lifting at any place along the line of filling movement because all racks and trucks are level and are equipped with rollers.

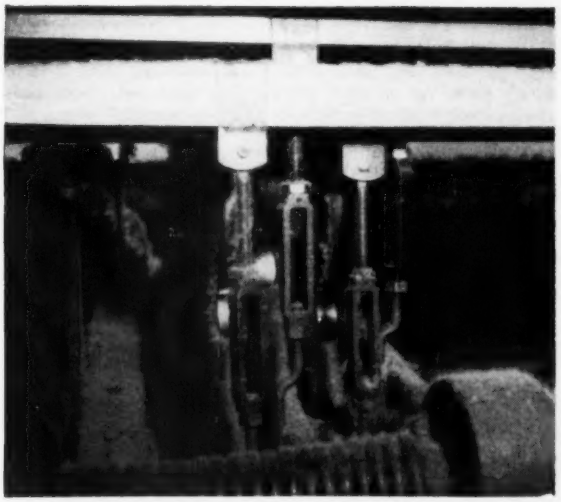
Empty baskets are returned to the spinning room, where they're refilled.

Warps Quickly Moved to Looms

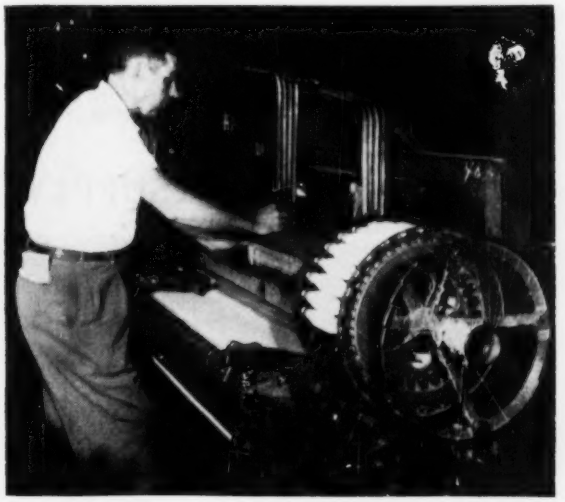
The slasher room is located near the spinning room at another entrance to the weave room. Since the slasher room is so close to the looms, warp beams to be tied on the looms are stored in the slasher room and taken to the weave room when a warp runs out. No warps are stored in the weave room to spoil the general appearance of neatness.

Only 1.25% Production Was Lost

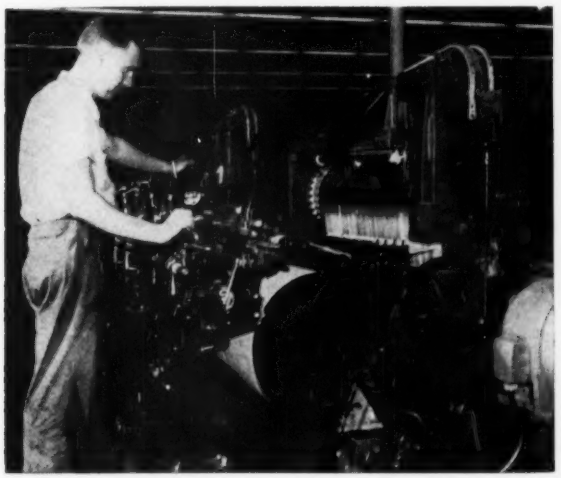
During the entire modernization program, weave-room production was reduced only 1.25%. Spinning frames



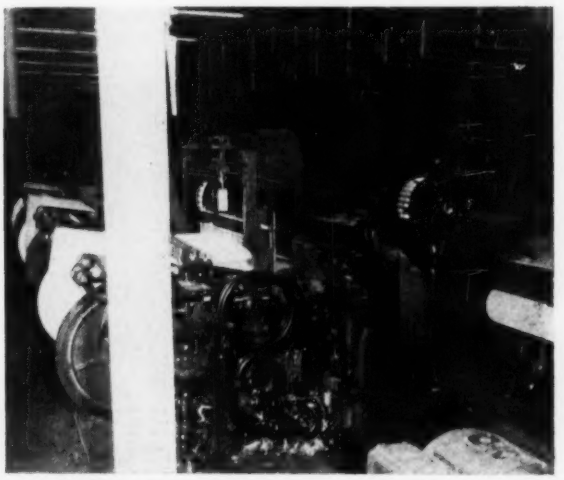
NEW JACK-STICK ASSEMBLIES were added to the 600 E-model looms rebuilt at Clinchfield. Antifriction bearings in the treadle rolls insure a smooth motion to the harnesses and also wear less than friction rolls. Fewer loom stops now occur from broken warp ends.



WALLACE PORUN, assistant overseer of weaving, is making a harness setting on the new spring tops added to the E-model looms. Midget feelers and Stafford thread cutters, which were also placed on the looms as they were rebuilt, have improved cloth quality.

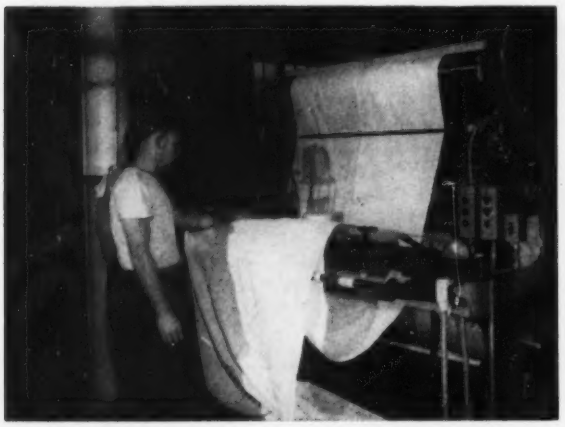


WARPS ARE TIED on the looms with a brand-new portable Barber-Colman tying-in machine. Jimmie Roland, operator, is tying the last hand of a warp. Clinchfield's cleaning program pays off here because drop wires are always free from lint that usually prevents the use of portable machines.



LOOMS ARE PLACED away from roof-supporting posts so that warps can be put in all looms without any extra effort. With this spacing, there's some lost floor space, but easy accessibility to looms by the warp man, loomfixer, and weaver offsets the small amount of floor space lost.

CLOTH ROOM



ASSEMBLY-LINE METHODS are used to stitch rolls of cloth together, brush, shear, and fold the cloth in one continuous operation. This unit is formed from a 1952 Curtis & Marble sewing machine, three-tier scray, vertical brusher, shearing machine, and cloth folder.

CLOTH IS INSPECTED as it is folded at the end of the row of machines. Alvin Revis places a piece of twine in the folded cloth to mark a defect for the cloth graders. The folder runs continuously because cloth is stored in the scray after it's stitched.

were swung out of windows from upper stories and lowered to the ground floor, where they were relocated.

One slasher was run constantly while the other one was being moved. Then the first-moved slasher was put in production, and the second one was moved.

Looms were rebuilt in the old weave room at the rate of 20 per day and were moved to the new weave room with a fork-lift truck. Work was scheduled so closely that the mounting pads were covered with quick-drying cement ready to receive the looms as they were completed.

Looms were left to set on the mounting pads overnight and then rocked for 6 hr. and warped.

600 Looms Rebuilt in 30 Days

The 600 looms were rebuilt, moved, and put back in production within a period of 30 working days.

The 300 new X-2 looms were started up within a 10-wk. period. Men who later became loomfixers on the X-2 looms worked with a Draper Corp. erector in setting up and starting the looms.

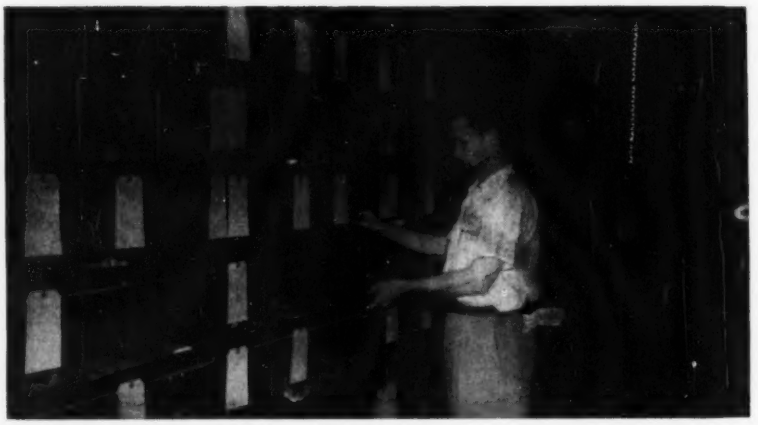
Gauges (battery, picker-stick, feeler-stand, and others) were used to set the looms before they were started. The gauges are still being used to maintain correct settings.

The weave room is equipped with fluorescent lamps and overhead atomizers and is completely air conditioned.

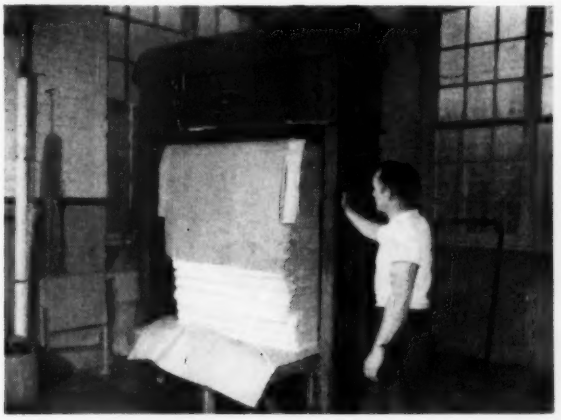
They're not through yet at Clinchfield. The rebuilt looms are spaced so that 22-in. beams can be replaced with 26-in. beams—and when the time comes, the old looms can be lifted out and wider looms put in without disturbing the wiring system.

SUPPLY ROOM

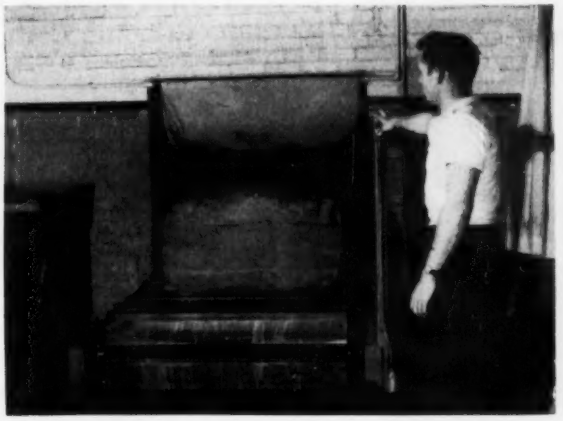
A COST SAVING of $10,000 per year is expected from the supply system now being used. A machine part must be turned in for each one issued. The used parts are inspected, and weave-room foremen are notified if loomfixers replace parts needlessly. Fray Williams exchanges parts with C. E. Lindsay.



THE CENTRAL SUPPLY ROOM is equipped with all-metal bins tagged with a running inventory of parts in each compartment. Fray Williams, supply man, is an experienced loomfixer who knows his stock thoroughly. Machine parts are grouped by motions. Small parts are in the top bins.

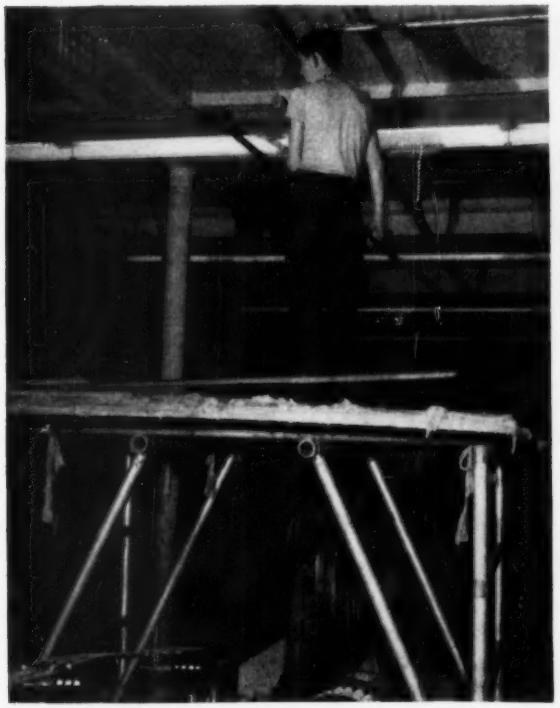


A FLOOR-LEVEL PRESS lifts the truck and cloth to baling position. Trucks are filled at the grading tables and moved to the press when they become full. The flow of the cloth is arranged so that one man, Felix Freeman, handles all cloth after it leaves the folder.



IN ONE DOOR and out through the opposite wall is the way cloth is moved through the cloth room at Clinchfield. Baled cloth is trucked only a few feet from the press to this conveyor that takes the bales to the shipping warehouse.

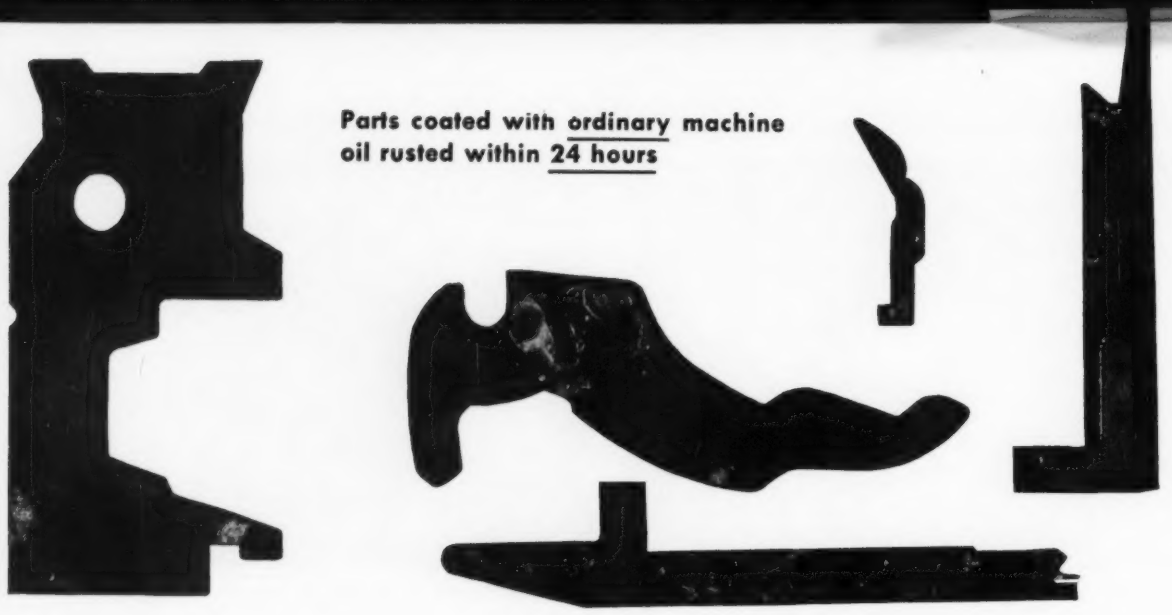
CLEANING AND HANDLING

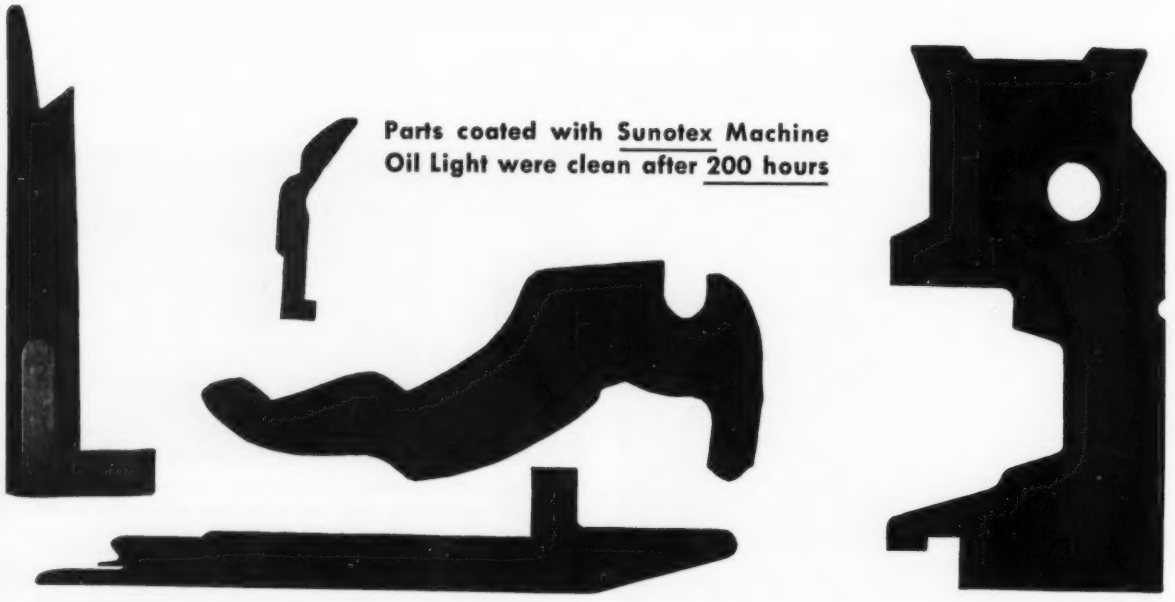


OVERHEAD CLEANING is continuous in the weave room. Commy Hunnicutt cleans all the overhead area each day on the first shift. The scaffold is equipped with casters, and another man pushes it along as the ceiling is cleaned. Weavers can tend their looms while the cleaning is being done.

NO TIME IS LOST in filling handling, since these metal baskets are taken from the spinning room and placed on metal racks in the weave room. The racks are equipped with rollers, and the truck has an antifriction bearing at the front. The battery-hand is Ruby Setzer.

GLAZED-BRICK WALLS with pumiced joints are kept shining. It's easy to keep the walls clean; they're just mopped down with a dry mop and all lint is removed. Walls are free from clothes or any objects that would collect lint, interfere with cleaning, or prevent neatness.





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STA Discusses

At the spring meeting of the Eastern Carolina Div., STA, held at the School of Textiles, N. C. State, the following were discussed.

12 Topics

- Bulk in drawing
- Lumps under aprons
- Spooler speeds
- Slashing wet warps
- Fast carding
- Grinding and setting
- High-speed drawing
- Measuring unevenness
- Slasher creeling
- Metallized take-up rolls
- Kinky filling
- Cloth inspection

From CARDING through WEAVING

Speeded-Up Carding

The subject of fast carding continues to be high in the interest of Carolina mill men. After several mills reported that they had tried higher speeds but not closer settings, J. F. Bogdan, who did the original work at N. C. State, offered some helpful suggestions:

"The closer you get to a lickerin speed of 800 rpm., the better off you are. The change is more dramatic, I think, between 600 and 800 than between 400 and 600 rpm.

"One of the points that we try to stress is the setting of the cylinder to the doffer. The closer you get the doffer to the cylinder, the better job you do of clearing the cylinder and preventing it from loading excessively. Loading of the cylinder results in bad work, and you strip when the work gets too bad.

"All the settings must be considered together in speeded-up carding. I can't tell you if lickerin speed alone is more important than the settings. In most of our tests, higher lickerin speed resulted in better work."

Card Grinding and Setting

At an STA meeting two years ago, one mill reported installation of a new system of grinding and setting cards. There were a lot of raised eyebrows at the time, but the mill's results outlined below appear to justify the system.

The method, in essence, is to set the card every other time it is ground. Six cards are ground on the first shift, six on the second shift, and four on the third. Each card is ground every 152 hr. Three cards are set on the first shift and three on the second. Each card is therefore set every 344 hr.

Flat settings on the cards, which are on a solid first floor, are never closer than 0.009 in.

The mill has five grinders. On the first shift one man grinds six cards and the other man sets three. The same arrangement holds for the second shift, and the fifth man sets four cards on the third shift. The same grinder does not grind the same card every time.

Neps are said to have been decreased considerably since the new system was put into effect.

High-Speed Drawing

High-speed drawing (200 ft. per min.) is giving one mill an average percent unevenness of 2.8. The four-roll frames, which are ball-bearing equipped, are being fed eight ends of 50-gr. sliver and deliver 42-gr. sliver. Maintenance costs are said to be less because there are fewer places to oil or grease.

An interesting discussion took place when the above mill said that the drawing would pay for itself in six months in labor costs alone and without changing from a 12-in. can to a larger one. It developed that the mill, because of its layout, could eliminate one man on each shift. Under the old setup there were seven breaker-drawing frames on the second floor, but the lap winders were in the basement. Now, with four high-speed frames, there's room for drawing and lap winders on the same floor.

Integrator vs. Average Variation

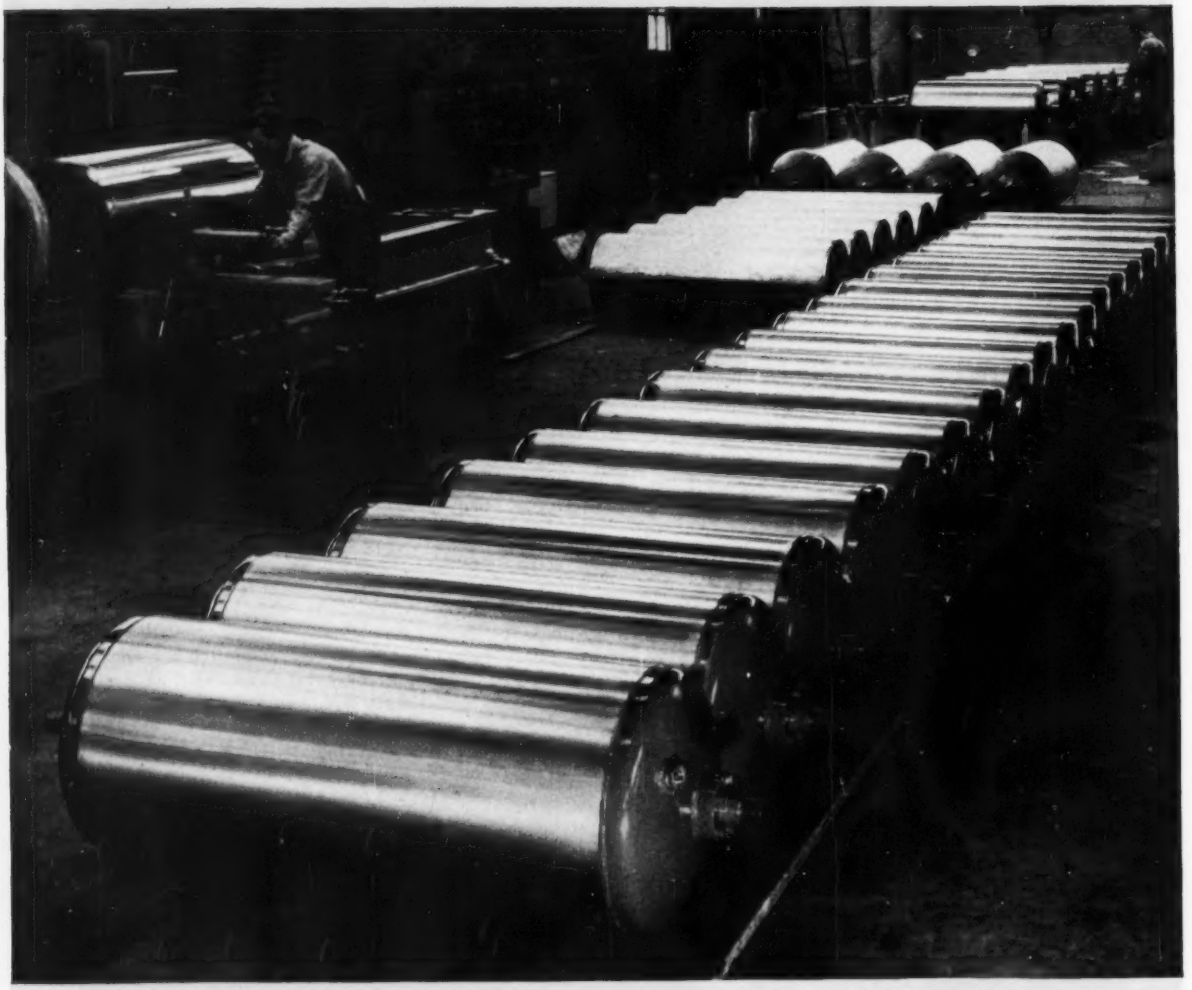
George Archer, Pneumafil Corp., gave a clear description of the difference between the two main measures of unevenness, the linear integrator

(*Continued on page 200*)

► New officers of the Eastern Carolina Div., Southern Textile Association, are: chairman, J. C. Hughes, Cone Mills, Hillsboro, N. C.; vice chairman, A. M. Moore, Erwin Mills, Durham, N. C.; secretary, Al Phillips, Edenton Cotton Mills, Edenton, N. C.

► New members of the executive committee are: J. B. Hutchinson, Patterson Mills Co., Roanoke Rapids, N. C.; and W. A. Rhinehardt, Golden Belt Mfg. Co., Durham, N. C.

They're rolling at Butterworth



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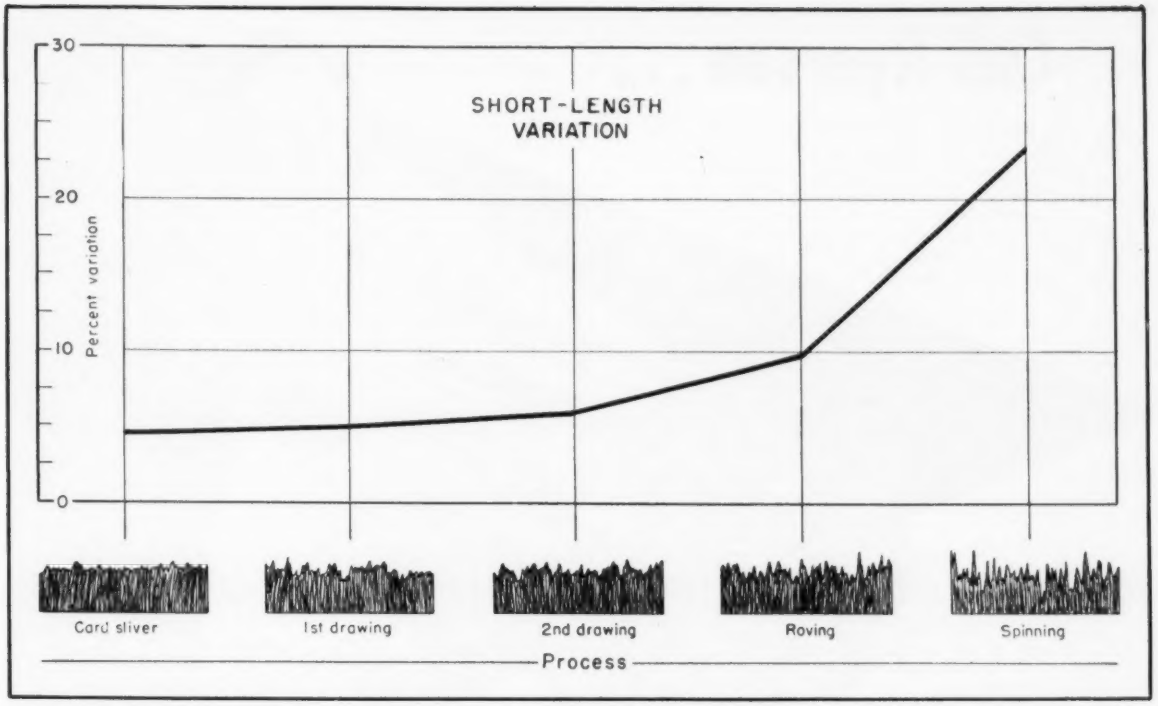

SHORT-LENGTH VARIATION increases slowly from cards through drawing and then sharply through roving and spinning. Variation percentages were found by weighing short lengths of stock at the different processes.

You Can Minimize Your YARN VARIATION

HIGHLIGHTS: The first step in reducing yarn irregularity is to determine which of five general types of variations is the offender—Drafting processes are the main contributors to yarn variations—Short-cycle irregularity increases as drafts increase and the strand gets finer.

By E. H. HELLIWELL, Contributing Editor, TEXTILE WORLD

DETECTING COTTON-YARN irregularities and analyzing their nature, magnitude, and frequency are the first steps in locating causes of the irregularities. The correct determination of the cause or causes is naturally necessary before any effective action can be taken in the elimination or reduction of the variation.

Two broad divisions can be made of yarn irregularities: (1) long-cycle variations that occur in long lengths of the stock and that can be detected by yarn or skein testing, and (2) short-cycle variations that can be detected only by testing short sections of the stock.

Long-length testing may be described as testing for variations between yards. Short-length testing is testing for variations within the yard. Measurements taken within the yard are more important for detecting the early variations that may later become worse.

There is some interrelation between the two types of variation (long and short). All stock in process contains short-length variations in the preparatory processes that may become long-length variations in the yarn. The evening effect of doubling is evident on both long- and short-cycle variations.

Card sliver is a good example of long-cycle variation. Short-cycle variations in the sliver are small while long-cycle variation (from one stripping period to the next) may be considerable. Spun yarn, on the other hand, usually shows a high short-cycle variation and a low long-cycle variation.

There are five measurable variations present to some degree in all cotton yarns. These variations are (1) weight per unit length, (2) diameter, (3) strength, (4) twist per inch, and (5) appearance. The last four variations are related to (1), unit weight. In-

(*Continued on page 232*)

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These Things Happen in Your Ager . . .

The three main phases through which the print color must pass to bring about fixation of the dyestuff on the fiber are:

1. Solution of the soluble ingredients of the print paste by absorption of water from the steam

2. Reduction of the vat dyestuff in presence of the reducing agent and alkali in the print paste to a soluble leuco compound

3. Adsorption of the reduced and solubilized dyestuff by the fiber as the result of transfer from the thickening agent

The point of maximum absorption of water from the steam atmosphere is between 100 and 94% r.h. at 212 and 216° F. Rise in temperature from other causes lowers the relative humidity and the solubilizing power of the steam, which bring about the decomposition of some vat dyestuffs and reduce color yield by limiting dye transfer and dulling the color.

It is necessary to condition or cool vat-color printed goods prior to ageing in order to dissipate the heat of drying of the prints and increase the moisture regain to normal.

If warm, dry, printed cloth is introduced into the steaming chamber, the heat of drying must be dissipated before conditioning of the material can take place. If not dissipated, this heat will slow down the rate of condensation of water vapor in contact with the material and the print color. A marked rise in temperature occurs.

These observations, supported by practical experience, make it clear that overdried or "baked" printed material shows inferior color fixation and yield as compared with prints thoroughly conditioned prior to ageing

Efficiency of VAT-COLOR AGEING *Depends on Temperature Control*

▶ So many factors enter into the picture—chemical reactions, steam condensation, machine design, and others—that a basic understanding of the effect of these variables will help the printer to control his process.

By T. N. PATRICK

THE SCHLIEPER-BAUM PROCESS for the reduction of indigo consisted of passing the printed goods through a specially constructed steam box provided for the complete exclusion of air. Air was excluded by introducing moist steam. The required degree of humidity was obtained by passing the live steam through water in the bottom of the machine, the water being covered with overlapping plates to prevent splashing of the pieces. The goods were given a passage of 30 to 35 sec. through the machine, which was sufficient to bring about a perfect reduction of indigo.

A process for the reduction of indigo by means of superheated steam in an air-free ager was tried. So long as indigo remained the only vat color, this method served very well; but with the introduction of hydrosulfite discharges and the new range of vat colors, difficulties were encountered.

Need More Time, Less Heat

The idea got around that high temperatures and superheated steam were necessary for the fixation of vat colors and hydrosulfite discharges. As subsequent events proved, no more serious blunder could have been made, and without doubt much of the early failure with vat colors can be attributed to this cause. The Schlieper-Baum failures were perhaps due in a large measure to insufficient time in the ager and not to any defect in the steam supply.

Where there is insufficient circulation in the ageing chamber, the temperature variations can be very wide at different portions of the chamber. At the center of the chamber, overheating will probably be greatest because of poor circulation of steam, heat of solution, and chemical reaction.

At the sides of the machine, the cooling influence of better circulation and the outside atmosphere will be reflected in the lower temperatures in these zones.

At the top of the machine near the steam chest, temperatures will again tend to rise because of the superheating effect of the drying chests.

At the bottom, the lowest temperatures are generally recorded because of the better circulation and saturation of the steam that rises from the surface of the boiling water.

Moist Back Gray Helps

In early ageing with roller agers, cooling at intervals was done by passing a moist back gray through the machine between runs of prints. This difficulty is overcome in modern practice by running a well-conditioned gray continuously and by increasing the flow of steam.

Under faulty ageing conditions, temperatures as high as 230° F. have been recorded. Such high temperatures invariably mean poor color values. At 230° F., the relative humidity is approximately 75%, whereas at 216° F., a satisfactory temperature for ageing, the relative humidity is about 94%.

The general conclusion from such facts would seem to be that: if the print cloth is thoroughly conditioned prior to ageing, less water will have to be condensed from the steam atmosphere and, consequently, the temperature will not rise as the result of heat of condensation.

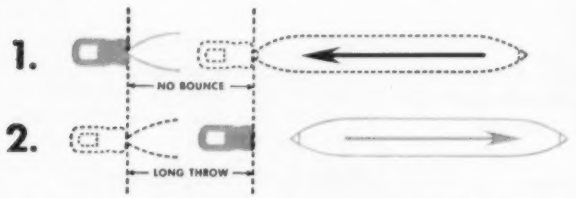
When it is considered that 970 Btu. are absorbed when 1 lb. of water is changed into steam and that this amount of heat is liberated when steam is condensed into water, it can readily be appreciated that there is a

(Continued on page 236)

On... and off to a flying start!

Put on a G&K PICKMASTER® Leather Picker and your shuttle will speed across the race plate and come to a smooth even stop *without bouncing.* You'll get more life out of each shuttle. You'll get better weaving with less bang-off.

PICKMASTER Pickers are precision-made of Hairitan® leather, firm, sturdy and resilient . . . they absorb repeated impact without shuttle bounce . . . they dissipate heat, preventing hot spurs.



1. Stop-action photographs prove that the G&K Pickmaster Leather Picker catches the shuttle spur in its precision hole *and sticks with it* to the end of the lay. 2. A split second later it follows through with a long sweeping throw that drives the shuttle straight and true across the race plate.

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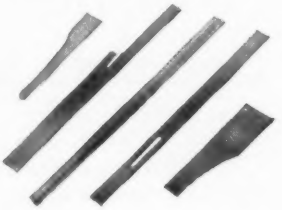
Pickmaster Pickers of famous Hairitan® Leather in 2- and 3-rivet style for Draper and Crompton & Knowles Looms. Also Oak pickers.

Straight and Curved Check Straps assure smooth shuttle throw, long life. Leather has high resiliency with low permanent stretch; straps are built to flex uniformly.

Endless Check Straps provide controlled cushioning action for the picker stick. They are positioned perfectly for each pick, and conform to the angle of the picker stick at all points.



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T-3

You Can Change FABRIC WEIGHTS Yet Retain Fabric Strength

If you have to produce a different-weight fabric suitable for the same end use as the original, with the functional properties altered only to the extent that is inevitable with a change in weight—

- **Keep your cover factors the same**
- **Maintain the same yarn-number balance**

The correct yarn numbers and cover can be arrived at in a single sequence of computations

By J. B. DICKSON, Textile Div., U. S. Rubber Co.

THE PROBLEM INVOLVED in changing a fabric weight is to retain the former fabric structure. The fabric's basic physical properties should remain as nearly as possible the same.

Structure is determined chiefly by cover factors, yarn-number balance, and crimp. If cover factors and yarn-number balance remain the same, so does crimp to the extent that it is under control.

Thus, when changing a fabric weight, remember to maintain the same cover factors and the same yarn-number balance.

The accompanying formulas help in such work and make it possible to arrive at the correct fabric weight and other factors in one sequence of computations—computations that are no more difficult than others regularly carried out by textile technologists and fabric cost men.

How To Start

The relevant information on the original fabric is obtained first. This information includes warp and filling cover factors, yarn-number balance, and change-in-weight factor.

The change-in-weight factor of the original sample is then used to figure the warp-yarn size needed to give you the desired fabric weight.

The filling-yarn size is figured from the yarn-number balance of the original sample. The number of ends and picks is figured from the cover factors of the original fabric.

During the above procedure some rounding off of figures and some adaptation to practical yarn numbers may be indulged in.

As a final step, the weight of the new fabric is estimated by means of the formula involving crimps or the formula involving the cloth-weight factor.

Typical Example

Problem: A plain-weave dynel fabric is satisfactory for a given application. Its weight is 9.0 oz. per sq. yd. But both a lighter fabric of 7.0 oz. per sq. yd. and a heavier fabric of 12.0 oz. per sq. yd. are also wanted.

First, we draw up the relevant data on the original 9-oz. fabric:

Weight in oz. per sq. yd. (W_s)	9.0; $9^2 = 81$
Warp yarn, cotton system (N_w)	24/2 = 12; $\sqrt{12} = 3.464$
Filling yarn, cotton system (N_f)	24/3 = 8; $\sqrt{8} = 2.828$
Ends per inch (N_w)	80
Picks per inch (N_f)	41
*Warp cover factor ($K_w = n_w \div \sqrt{N_w}$)	23.09
Filling cover factor ($K_f = n_f \div N_f$)	14.50
Yarn-number balance ($R_r = \sqrt{N_w} \div \sqrt{N_f}$)	1.125; $1.125^2 = 1.501$
Warp weight factor ($W_w = n_w \div N_w$)	6.67
Filling weight factor ($W_f = n_f \div N_f$)	5.13
Sum of weight factors ($W_w + W_f$)	11.80
Cloth weight factor $\left[W^* = W_s \div (W_w + W_f)\right]$	0.763
Change-in-weight factor ($w = W_s \times \sqrt{N_w}$)	31.18; $w^2 = 972$
Warp crimp (c_w)	21
Filling crimp (c_f)	2

For details on figuring cover factors, see TW, Feb. '53, p. 128

In figuring for the new weights, check your work with the original fabric as you go along. Yarn numbers, ends, picks, and weight should come out logically, the same as in the original:

	7 oz.	12 oz.
Warp yarn ($N_w = w^2 \div W_s^2$)	19.84	6.75
Round off N_w	40/2	14/2
Equivalent N_w	20s	7s
$\sqrt{\text{Equiv. } N_w}$	4.472	2.646
Filling yarn ($N_f = N_w \div R_r^2$)	13.32	4.664
Round off N_f	40/3	14/3
Equivalent N_f	13.33s	4.667s
$\sqrt{\text{Equiv. } N_f}$	3.651	2.160
Ends per inch ($n_w = K_w \times \sqrt{N_w}$)	103 ends	61 ends
Picks per inch ($n_f = K_f \times \sqrt{N_f}$)	52.9	31.3
Round off n_f	53 ppi.	31½ ppi.

Now check your work by estimating the new fabric weights, using experimental weight factors:

	7 oz.	12 oz.
Warp weight factor ($W_w = n_w \div N_w$)	5.17	8.71
Filling weight factor ($W_f = n_f \div N_f$)	3.97	6.75
Sum of weight factors ($W_w + W_f$)	9.14	15.46
Estimated weight in oz. per sq. yd. — $W_s = W^* (W_w + W_f)$, or $W_s = 0.763 (W_w + W_f)$	7.0	11.8

Use Available Yarns

The question now is how well the above constructions fit into your mill organization. The mill's spinning limit, for example, may be 30s; but the construction for the new 7-oz. fabric calls for 40s.

The simplest thing to do is use 20/1 for the warp and 26/2 for the filling. Since the latter is close to 24/2, which the mill is already making, the practical choice may be 24/2.

Without adjustment of the picks per inch in such a case, the estimated weight would be

$$W_2 = 0.763 \left[5.17 + (53 \div 12)\right] = 7.3 \text{ oz. per sq. yd.}$$

If a weight closer to 7.0 is wanted, the picks can be refigured by means of the desired-filling weight factor, W_f, which is 3.97. So we would get

$$\text{Picks per inch} = W_f \times N_f = 3.97 \times 12 = 48 \text{ instead of } 53 \text{ ppi.}$$

Final Considerations

In the above example, the experimental cloth weight

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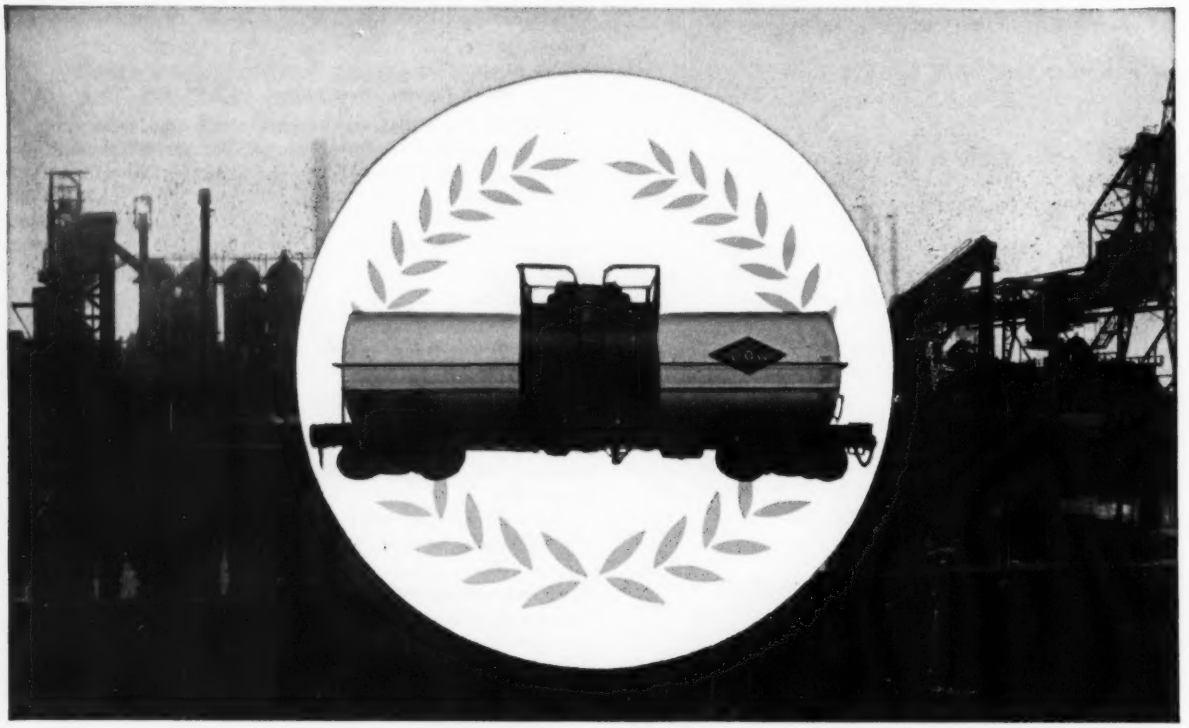

Once your processing methods and materials are set, you have to be certain that the standards are maintained to assure the same efficient results every time.

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factor has been used for convenience. The exact formula for weight in ounces per square yard, taking crimp into consideration, can be used instead.

When some other reciprocal system of yarn numbering is involved, there is no change in the above computations. If the exact formula for weight involving crimp is then used, the correct figure for the given yarn system must be used instead of the 0.686 cotton figure.

The above procedure is used, with the correct formulation as indicated in an accompanying column, for arriving at the correct yarn numbers, ends and picks, and fabric structure for different fabric weights in any fiber and in any kind of yarn-numbering system.

Obtaining the Formulas

On the Cotton System—

The equation for the weight of a woven fabric is:

$$W_z = 0.686 \left[\frac{n_w \times (1 + c_w)}{N_w} + \frac{n_f \times (1 + c_f)}{N_f} \right]$$

Keeping in mind the three following definitions:

(1) cover factor K equals $n \div \sqrt{N}$; (2) yarn-number balance R_r equals $\sqrt{N_w} \div \sqrt{N_f}$, whence $1 \div \sqrt{N_f}$ equals $R_r \div \sqrt{N_w}$; and (3) the cotton yarn number N equals $\sqrt{N} \times \sqrt{N}$

we can substitute in the basic equation and will come up with a more exact formula for our needs.

The basic equation may then be rewritten:

$$W_z = 0.686 \left[\frac{K_w \times (1 + c_w)}{\sqrt{N_w}} + \frac{K_f \times (1 + c_f) \times R_r}{\sqrt{N_w}} \right],$$

$$\text{or } W_z = \left[0.686 \div \sqrt{N_w} \right] \times \left[K_w (1 + c_w) + K_f (1 + c_f) R_r \right]$$

As mentioned previously, the quantities that must be kept constant if the fabric structure is to remain unchanged are cover factors, yarn-number balance, and crimp.

Now, combining these and the numerical constant in the above formula into a new constant to arrive at a factor for change in weight, w— whereby

$$w = 0.686 \left[K_w (1 + c_w) + K_f (1 + c_f) R_r \right],$$

$$W_z = w \div \sqrt{N_w}, \text{ and } w = W_z \times \sqrt{N_w}$$

we see that our desired cotton-system formulas amount to

$$N_w = w^2 \div W_z^2$$

and $$N_f = N_w \div R_r^2$$

If, in changing weights, w is kept constant, the original fabric structure is maintained.

—●—

The two equations may also be written in terms of cloth-weight factor, when the amount of crimp is not known, as

$$W_z = W^* (W_w + W_f) = W^* \left[(n_w \div N_w) + (n_f \div N_f) \right] =$$

$$W^* \left[(K_w \div \sqrt{N_w}) + (K_f R_r \div \sqrt{N_w}) \right] = (W^* \div \sqrt{N_w}) \times (K_w + K_f R_r)$$

The change-in-weight factor, w, equals $W^* (K_w + K_f R_r)$, or $W_z \times \sqrt{N_w}$.

On the Denier-System—

When yarn number is expressed in a direct-numbering system such as denier, H, the equations become

$$W_z = 0.000129 \left[n_w \times H_w (1 + c_w) + n_f \times H_f \times (1 + c_f) \right]$$

$$= \sqrt{H_w} \times 0.000129 \left[K_w (1 + c_w) + K_f (1 + c_f) R_r \right]$$

$$= w + \sqrt{H_w}$$

Employing the cloth-weight factor, we see that

$$W_z = W^* \left[(n_w \times H_w) + (n_f \times H_f) \right] =$$

$$\sqrt{H_w} \times W^* (K_w + K_f R_r) = w \times \sqrt{H_w},$$

that $w = W^* (K_w + K_f K_r) = W_z \div \sqrt{H_w}$,

that $H_w = W_z^2 \div w^2$,

and that $H_f = H_w \times R_r^2$

Nine Woven-Fabric-Weight Constants

To compute by formula the woven-fabric weight in ounces per square yard in different yarn-numbering systems, use the values for the constant shown below under each of the nine given systems:

Reciprocal Systems (N)	Value of Constant
Cotton	0.686
Worsted	1.029
Woolen Cut	1.921
Woolen Run	0.360
Typp	0.576
Direct Systems (H)	
Denier	0.000129
Grex	0.000116
Linen (dry spun), hemp, jute	0.0400
Woolen (Am. grain)	0.00412

How Weight Factors Are Derived and Used

When calculating for a change of weight only in a fabric (estimated in ounces per square yard), a fabric man should use warp and filling weight factors and an experimental cloth-weight factor.

Weight factor can be defined as the number of ends or picks per inch, multiplied by the weight per unit length (linear density) of one yarn.

If N stands for a cotton (or any reciprocal-system) yarn number and H for a yarn number in deniers (direct system), and if n equals the yarns per inch and subscripts w and f indicate warp and filling, we find the following:

Weight Factor	For Reciprocal System Of Yarn Numbers	For Direct System Of Yarn Numbers
warp (W_w)	$n_w \div N_w$	$n_w \times H_w$
filling (W_f)	$n_w \div N_f$	$n_f \times N_f$

The exact formulas for obtaining a fabric weight in ounces per square yard (W_z), when c stands for a decimalized percent of crimp (for example, c = 1.12 means 12% crimp), read as follows:

In Reciprocal Units

$$W_z = \text{constant} \times \left[\frac{N_w \times (1 + c_w)}{N_w} + \frac{n_f \times (1 + c_f)}{N_f} \right]$$

$$= \text{constant} \times \left[W_w \times (1 + c_w) + W_f \times (1 + c_f) \right]$$

In Direct Units

$$W_z = \text{constant} \times \left[n_w H_w \times (1 + c_w) + n_f H_f (1 + c_f) \right]$$

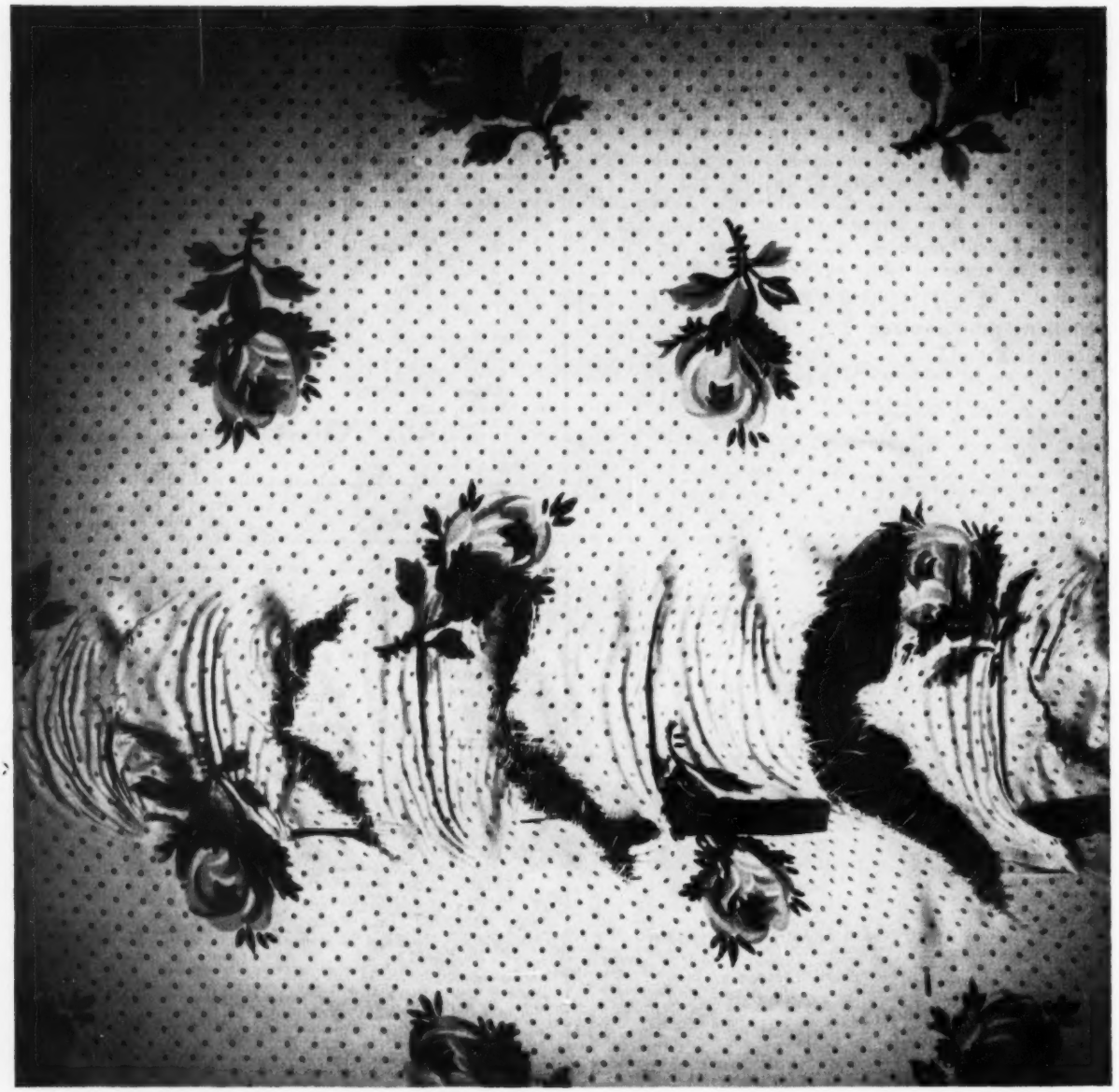
$$= \text{constant} \times \left[W_w \times (1 + c_w) + W_f \times (1 + c_f) \right]$$

An experimental cloth-weight factor can be derived from the above formulas by disregarding crimp and by substituting for the constant a symbol (W^*) for the experimental cloth-weight factor:

$$W_z = W^* (W_w + W_f), \text{ or}$$

$$W^* = W_z \div (W_w + W_f)$$

Since all woven fabrics have crimp, the experimental cloth-weight factor (W^*) is always greater than the constant including crimp. And the value of W^* increases with the tightness of the weave.



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How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

The Supervisor's Part In Management Development

▶ Today's foreman may be training tomorrow's company president—or he may be getting in line for a top job himself. In executive training, as in all aspects of human relations in industry, the line supervisor is often the man who makes or breaks the program.

By FRANK T. DE VYVER
Vice President and Director of Personnel Relations, Erwin Mills, Inc.

EVERYONE IN INDUSTRY TODAY seems to have jumped on the band wagon of management-development programs. Books are being written on the subject; conferences invariably devote one or more sessions to problems of training management; consulting firms and industrial psychologists are all discussing these problems. And rightly so, because American industry must have well-trained management people if we are to continue the growth of the past.

At the risk, therefore, of being called a band-wagon jumper, I would like to discuss briefly the place of the line supervisor in this trend. As usual, the supervisor is the key man; but sometimes staff people responsible for so-called "programs" are apt to forget the importance of the line supervisor in these programs.

What the Programs Try To Do

Let's first see what the management-development programs are supposed to do. One company listed these four goals: In the first place, the program was designed to develop the abilities of each member of the management team to undertake greater responsibilities and thus relieve the boss for some thinking and planning. Second, the company was trying to overcome the bad effects of extreme specialization so common in modern industry. The specialist is needed, to be sure, but someone has to coordinate the work of the specialists. Third, it sought to improve supervision; and finally, it was trying to develop a manpower reserve for future needs.

Varied Techniques Are Needed

The techniques used to achieve these goals differ widely, of course. First there must be proper selection of the men and women capable of developing into leadership on the management team. This screening is done by testing and interviewing. New tests and better interviewing methods have been developed to make selection techniques more accurate.

Various types of education and training are then used to develop the ones selected. Many universities today have courses ranging from 2 to 16 weeks where potential management people can learn about the problems of general executive responsibility as differentiated from specific staff or line duties. Training courses are also used within the company itself. These may be so-called "canned" programs or may be developed by the plant personnel department. Young men from the colleges or from the ranks may be put through various parts of the business on a type of apprentice program. Or a young person of ability may be tossed into a situation to sink or swim—a technique that promptly leads to good executive development or failure.

Usually the programs provide some method of testing to tell whether the selection has been correct and the training adequate. The survey previously mentioned, however, reports that this last phase of a good management-development program often is neglected.

Where the Supervisor Comes in

In all aspects of these programs, the line supervisor plays important roles. In fact, there are three ways in which he may become involved. He may be selected for further advanced training or development; he may be asked to help train the young man newly hired for a management-training program; or he may be asked to help in the selection and training of workers in his department for promotion to management positions.

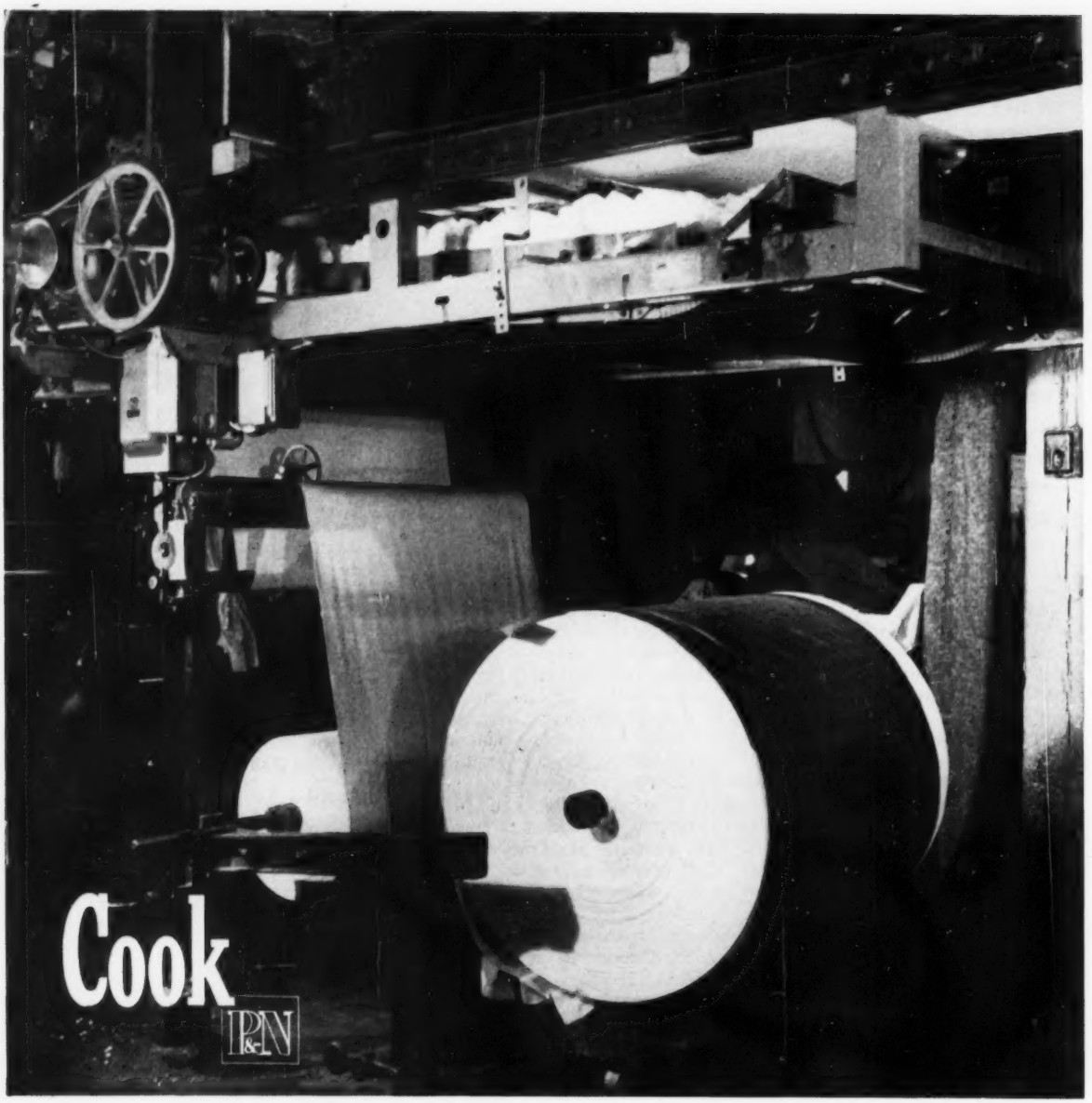
It is trite to say that industry is always looking for men to promote to higher positions. Yet the supervisor running his more or less routine job each day may forget that he is being considered for possible promotion if his company has any awareness of the need for management development.

Getting in Line for Promotion

How do you get noticed and get in line for promotion and further training? There's certainly no one-and-only rule. Gene Benge, in a recently published pamphlet, *Getting Along With People*, says that industry pays the highest salaries to "those who have mastered the gentle art of getting along with people." That may be true, but every supervisor knows that he had better have high production, low seconds, and low costs or he won't stay long. What the supervisor sometimes forgets is that good production is usually found in those departments where the boss knows how to get along with people. Nevertheless, many mill executives still select supervisors on the basis of technical knowledge; and textile schools seem to consider human-relations courses of minor importance.

Each man will have to determine for himself how he can best advance. If his company, however, really has an executive- or management-development program, he will not advance simply because he has more technical ability to fix a loom than the other supervisors in the plant. He must be a leader, must be willing to accept responsibility, and must be constantly seeking to develop and educate himself. Such men stand out in any organization, and

(*Continued on page 218*)



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Exploring

The Textile Community

Callaway Helps LaGrange Build a Better School

▶ Every community has the problem: how to provide good school facilities. Here's the answer one mill organization and one city found in a cooperative project.

By MILDRED BARNWELL ANDREWS

DOWN IN LAGRANGE, GA., the Callaway Organizations have helped local educational leaders provide the answer to an important community problem with the completion of the new Unity School for children of elementary age. The company has contributed funds and its executives have given their time and know-how to help make such modern facilities possible.

New Unity is a public school; but because it is located in the neighborhood of the Callaway plants, 70% of the students are children of textile employees. It was built at a cost of nearly half a million dollars; an additional $73,000 went into equipment and furnishings.

Funds for the building, furnishings, and equipment were provided jointly by the City of LaGrange and Callaway organizations. Callaway Mills and Callaway Educational Association contributed $290,000. Callaway Community Foundation donated the building site, adjacent to the old school building site, which will be new Unity's playground now that the old building has been torn down. Another similar cooperative school project, to cost about $1,500,000, will be opened in LaGrange next fall.

A. B. Edge, Jr., president of Callaway Mills Co., was chairman of LaGrange's Board of Education when the new Unity School was being built. His interest in the improvement of local educational opportunities has been unflagging during many years of community service and continues in his present capacity of chairman of the building committee of the Board of Education. Practical suggestions from the school principal, the school superintendent, and Mr. Edge helped the architect who drew plans for the new school. During construction, details were checked by the four. As the building neared completion, the city superintendent of schools and the interior decorator found Mr. Edge's suggestions invaluable in the selection of furnishings and choice of decor.

New Unity houses the same number of classes and about the same number of children as the old school, which was built about the time of World War I. But in addition it includes accommodations for all the features that have long been a part of Callaway Mills Co.'s educational and cultural program. For years the company has supplemented the standard school curriculum with departments such as art, dramatics, physical education, speech, and orchestra. The new school has classroom accommodations for all these departments.

The building, which covers nearly an acre, incorporates the newest architectural features and equipment for schools. Constructed of brick and reinforced concrete and with concrete floors throughout the building is considered fireproof. Ceilings of acoustical tile help to cut down noise.

The 10 classrooms are all on the same floor. They are light and airy,

(Continued on page 222)

CLASSROOMS in the new Unity School are equipped with modern desks and such features as tackboards, fluorescent lights, and venetian blinds.

THE ART DEPARTMENT has the usual drawing, painting, and clay modeling, as well as an electric kiln and potter's wheel for ceramics classes.

Alemite "Friction Fighters"

save manufacturer $22.70 every 8 hours!

Increase output 11% on one machine...completely eliminate lubrication downtime

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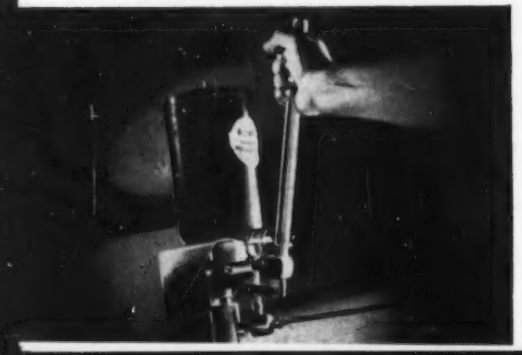

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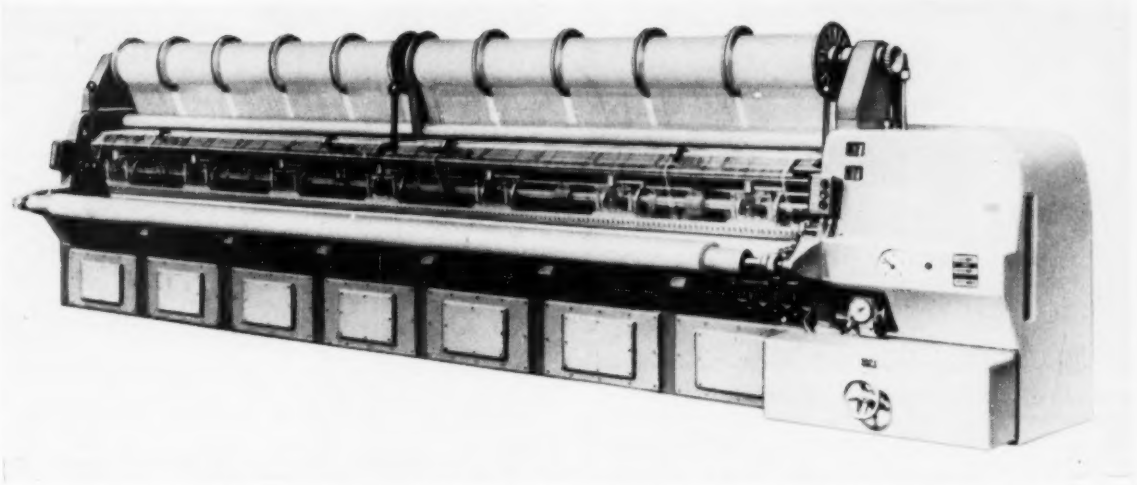
TEXTILE Equipment NEWS

Improved Tricot Knitter Produces at 600 to 750 Courses per Minute



MAYER TRICOT MACHINE has been completely redesigned and is now only about 4 ft. high. All parts are easily accessible.

The Ultraspeed Mayer tricot machine, which "cruises" at a speed conservatively stated at 600 to 750 courses per minute under mill conditions, has been announced by Alfred Hofmann & Co., 635 59th St., West New York, N. J.

The refined motions of the machine provide for structural weight where rigidity is needed and a light but sturdy construction of the moving parts.

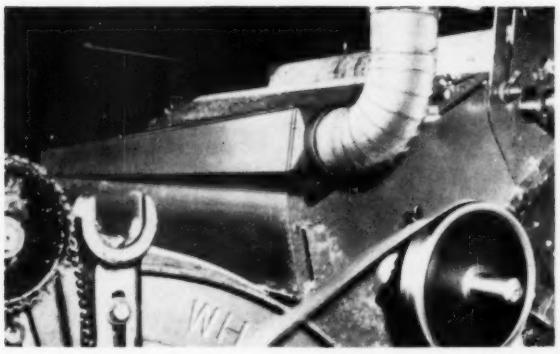
The machine has a positive warp-drive mechanism to assure a continuous flow of a predetermined length of yarn. Chain-link pattern wheels are successfully used to control the lateral guide-bar motions, even at extreme high speeds.

The main camshaft is located at the bottom of the machine, with all cams running in oil. The motions to the knitting bars are provided by adjustable arms that are easily changed and adjusted to the timing of the motions of all bars of the knitting elements.

The machine was designed for easy accessibility to the parts and for easy maintenance. The redesigning job has allowed the machine to be reduced in height to 4 ft.

Circle T-1 on Reader-Service Card

Wool-Fancy Exhaust System Allows Higher Cylinder Speeds



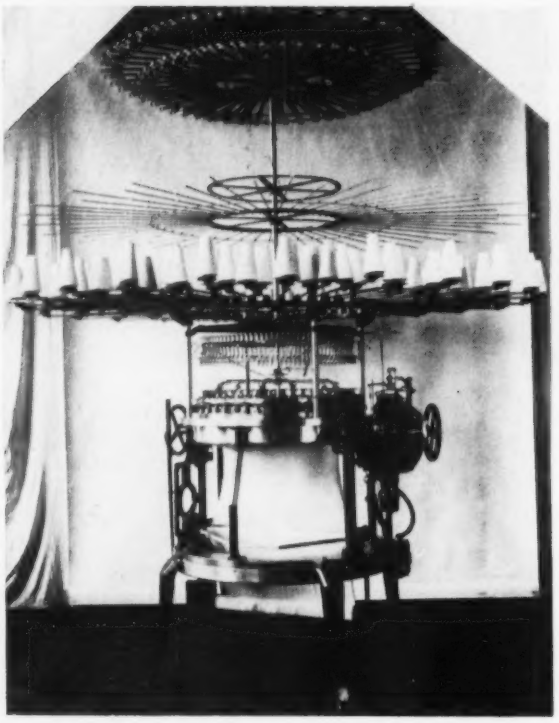
FANCY COVER manufactured by Whitin Machine Works, Whitinsville, Mass., for its woolen cards is of a shape to control air currents and to pipe away any fly resulting from high cylinder and fancy speeds. The cover is adjustable to give a close fit to the adjacent worker roll, and gauging of the fancy-roll settings is possible without raising the hood. The connecting piping slips off to allow the cover to be raised and pivoted back on slotted brackets when necessary.

From the piping from each card the lint travels to a dampered main duct, usually located overhead, from where it is exhausted through a fan to a collector over the feeder hopper, or is exhausted directly into the stock bin.

With the new waste-exhaust system, 60-in.-dia. woolen-card cylinders can be run as high as 100 rpm. Production increases up to 20% are possible, less cleaning is necessary, and the roving produced is evener than usual.

Circle T-2 on Reader-Service Card

Balbriggan Knitter Has 48 or 64 Feeds



A MULTIPLE-FEED BALBRIGGAN MACHINE, with a 30-in.-dia. cylinder and any desired needle index, has been brought out by Wildman Mfg. Co., Elm and Astor Sts., Norristown, Pa. It is designed with 48 and 64 feeds.

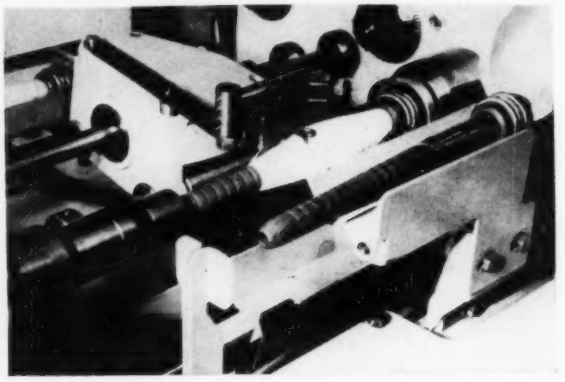
The 48-feed machine is arranged with a 48- or 96-end electric stop motion, while the 64-feed unit has a 64-end stop motion.

The machine is equipped with cylinder stitch-overthrow guard cams that move in unison. Thus the knitting of different-length stitches by needles that may be tight or loose in their slots is eliminated.

An adjustable knockover cam operates on the web-holder implements in the dial. Stitches can be regulated by the micrometer stitch adjusters and the movable knockover cams.

Circle T-3 on Reader-Service Card

Hacoba All-Purpose Filling Winder Has New Improvements



AUTOMATIC COMPENSATION OF TENSION is provided for during the whole traverse of the winding of the bobbin so that there is no density variation between the base of the bobbin and the tip.

The new Hacoba automatic filling winder, which incorporates three main features—a new builder motion, a new yarn guide, and a new tensioning arrangement that permits winding with a high and constant density—is being introduced into the United States by Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass. The units were originally introduced in Britain by Muschamp Taylor Ltd.

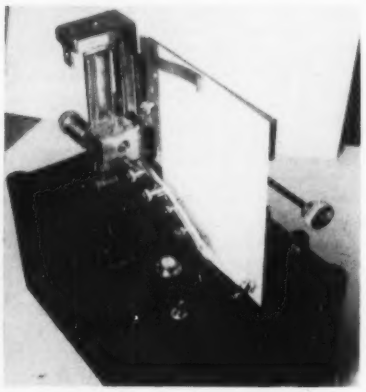
All types of fibers can be wound. Winding speeds for medium-quality yarns of 10,000 rpm. and over can be obtained. Fine yarns wind at spindle speeds of 8,500 to 9,000 rpm.

The builder motion uses an adjustable advancing mechanism that incorporates the original unit's four-spindle winder bar. A flat feeler insures cylindrical packages; but it can be swung out of the way when there is danger of yarn abrasion, and the yarn then advances on the package by positive gearing.

The tangential yarn guide operates in conjunction with the new tensioning arrangement. The yarn follows a straight path from the tension device to the package at all times, regardless of the diameter of the package.

Circle T-4 on Reader-Service Card

Flat-Bundle Fiber Tester Applies Constant Rate of Load



VERTICAL PLANE of the clamp positions and the motor drive loading 1,000 grams per second give the elongation and breaking load directly in grams on the chart.

A new 15x9-in. fiber tester for the tensile testing of cotton fibers in flat bundles has been developed by Scott Testers, Inc., 95 Blackstone St., Providence, R. I. Known as the Clemson flat-bundle fiber tester because it was originally devised by Dean Hugh M. Brown of Clemson College, the new instrument yields testing results that are less variable, more comprehensive, and more significant than have been possible heretofore.

Advantages of the tester are:

1. It applies a constant rate of load to the sample.
2. The sample gauge length can be varied from 0 to 10 mm.
3. The unit, motor driven, can give either a single tensile test or perform in continuous hysteresis cycles.
4. Breaking load and elongation are recorded instantly without lag.
5. A permanent record, reading in grams, is produced for reference and filing.

The sample clamps are positioned in the vertical plane. The loading system is dead weight and has a constant rate of increase, with the motor drive loading at a rate of 1,000 gm. per sec.

The indication of the instantaneous load upon the sample is drawn continuously by the recording pen, which is integrated with the moving clamp, on the chart inserted in the holder. Elongation and breaking load are also indicated on the graph so that the operator can determine the breaking load directly in grams.

Circle T-5 on Reader-Service Card

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SINGLE HEAD SPOOLS

Another exclusive Sonoco development for packaging industrial threads. Constructed with a flush base which is tapered to permit smooth uniform tension to sewing machine. Available in a range of base diameters and barrel lengths with special surfaces. Colored lacquer tips can be ordered for identification.

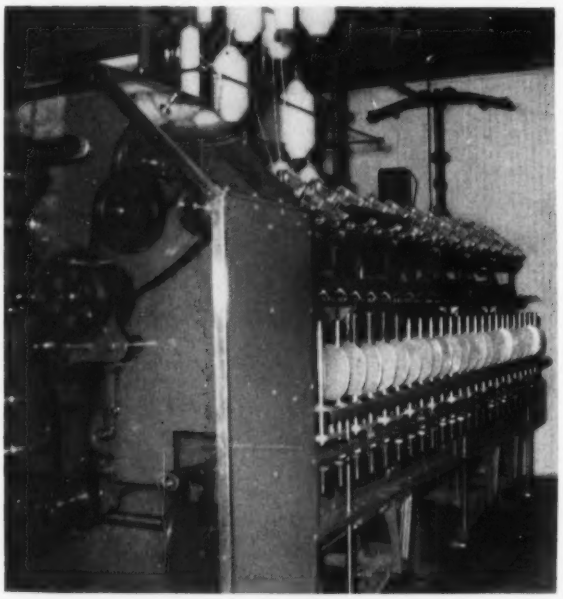
SONOCO PRODUCTS COMPANY

MAIN OFFICE—HARTSVILLE, S. C.

MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT.
PHILADELPHIA, PA. GARWOOD, N. J. LOWELL, MASS. GRANBY, QUE.

DEPENDABLE SOURCE OF SUPPLY

Spinning Frame Has Builder Motion in Head End



FLEXIBILITY is the keyword of this new spinning frame designed and manufactured in the South. Staples up to 2¾ in. in length can be processed. Gauges from 3 to 4½ in. are easily set up as needed.

A new ring spinning frame, which has a head end that houses the builder motion as well as all gearing, which has adjustable 1½-in.-dia. steel samsons that allow a traverse range of 8 to 11 in., and which has top suspension arms adaptable to use of any single or double-belted drafting system, has been developed by Textile Equipment Corp., subsidiary of W. D. Dodenhoff Co., Inc., Greenville, S. C.

Design of the top and bottom roll assemblies provides for drafting adjustment up to 2¾-in. staple length, with gauges of 3, 3½, 4, and 4½ in. possible.

The antifriction top rolls are individually spring weighted and are suspended from the top arm. A snap-action release allows each arm to be raised independently for ease in cleaning, for removing lap-ups without cutting, and for taking rolls out. No cap bars or nibs are used.

The draft range is from 10 to 60. Twist range is from 10 to 80. Silent chain and helical gears are used throughout the drive; so there is no backlash on starting up the frame. The gearing mounted on sealed ball bearings is readily accessible and requires only one wrench to adjust any gear or bracket.

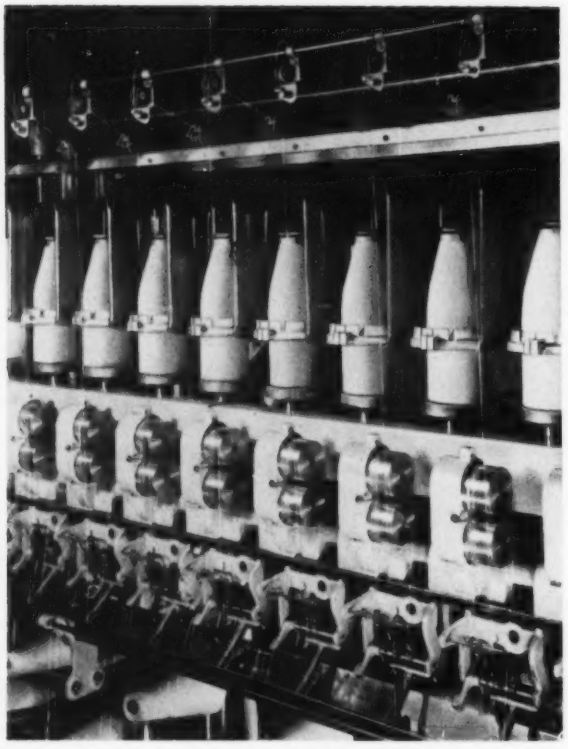
A sump-pump system of continuous lubrication is incorporated also in the head-end housing. With the exception of the bottom fluted roll, lubrication attention is not required more frequently than once a year.

An umbrella-type creel is used with top suspension bobbin holders. Antifriction spindles are included as standard equipment. The frame can be adapted to any air-suction system in place of the scavenger rolls.

The spinning frame has been and will be completely engineered, manufactured, and serviced from the South.

Circle T-6 on Reader-Service Card

British Cotton-System Twister Has Creel Underneath



UPWARD DIRECTION of the cotton yarn being twisted is a characteristic of this frame. Yarns are twisted from cones creeled in below and are run onto bottle-type bobbins. Standard ring size is 3¼ in.; length of traverse, 8½ in.

An all-purpose twister for natural and synthetic fibers spun on the cotton system has been introduced commercially by S. E. Scragg & Co. Ltd., Macclesfield, Cheshire, England. The full-size machine has 128 spindles and runs between 8,000 and 8,500 rpm. The standard ring size is 3¼ in.; the length of traverse is 8½ in.

Cones weighing up to 2 lb. are used in the creel, which is located underneath the frame; and twister bobbins of the bottle type, holding up to 14 oz. of yarn, are formed.

From the cones and through an automatic stop-motion arrangement, the yarn is brought upward and around the twin feed rolls, which are slightly tapered and which engage and disengage, as required, from an individual gear drive.

From the feed rolls, the yarn passes down to a trough below, through which the ends pass on pulleys and go on up to the top rail pulley and then on down through the traveler on the ring and onto the twister bobbin. The top rail pulley moves up and down with the ring rail to insure a constant balloon. Antiballoon separators are provided.

British operators tend 2,400 spindles on this machine, known there as the S. E. S. Bolton-system ring doubler. Yarns as fine as 120s can be twisted on the frame, as well as 15s/3 or even filament yarns in various deniers.

Circle T-7 on Reader-Service Card

Your Packing Problem Could Be Gaylord's Next Success Story!

Extra weight to hold . . . odd shapes to pack . . . complicated construction and dozens of other unusual requirements . . . seldom stump the experts of Gaylord's Research and Engineering Division. In hundreds of ways they have designed corrugated and solid fibre containers to save packing time, shipping money and protect products better.

Gaylord packaging engineers never say "can't"! For information and cooperation, phone your nearest Gaylord office. It's listed in the classified section of your phone book, under Boxes (Gaylord).

Gaylord Boxes

Their unseen quality gives you an extra margin of safety.

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS • Sales Offices Coast-to-Coast

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

Tensile Tester Has Load Range From 5 Grams to 5,000 Lb.

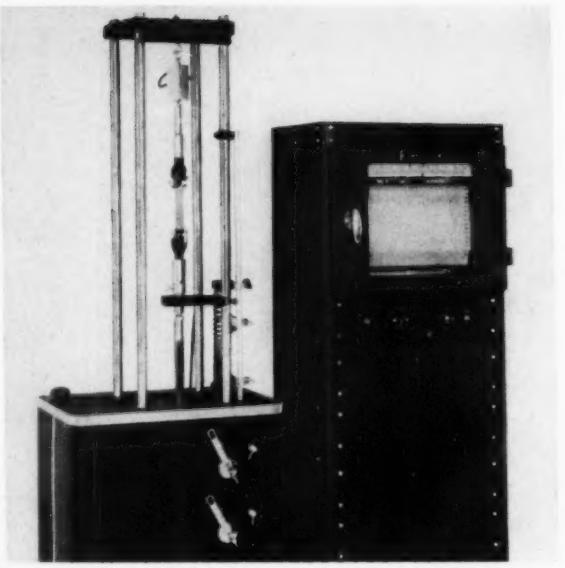
A new electro-hydraulic tensile tester with a rigid crosshead and with strain gauges for load measurements has been brought out in a 49RC model by Thwing-Albert Instrument Co., Penn St. at Pulaski Ave., Philadelphia 44, Pa. Full-scale load ranges from 5 grams to 5,000 lb. are available in this model.

The hydraulic drive system provides constant rates of elongation that are infinitely adjustable on a throttle dial. No gear changing is required. The drive system has low inertia and does not overshoot at high speeds.

Rates of extension from 0.1 to 20 in. per min. are standard. Special ranges up to 250 in. per min. can be provided. The return stroke speed is independent of the pulling speed.

The electronic recorder and controls are in a separate movable cabinet.

Circle T-8 on Reader-Service Card



INFINITELY ADJUSTABLE RATES OF EXTENSION are possible with the hydraulic drive system provided by this materials tester.

Improved Cot Runs Longer Between Buffings

A new cot that is composed of a synthetic-rubber blend containing Ibrocol, and that cuts down on eyebrowing has been developed for yarn processors by Dayton Rubber Co., Riverview Ave., Dayton 1, Ohio. The new cots make necessary fewer cleanings of the clearer boards, and they also run longer between buffings.

The cot is designed with the coefficient of friction that is best suited to yarn manufacturing. As a result, short fibers are removed and transferred under the clearer boards while the longer fibers, which ordinarily build into eyebrows, continue on in the yarn; therefore, less picking of clearer boards or rolls is necessary.

Laboratory and field tests show retarding of cot slicking and glazing. The cots are unaffected by moisture or temperature changes and do not groove, pit, or develop flat spots.

Circle T-9 on Reader-Service Card

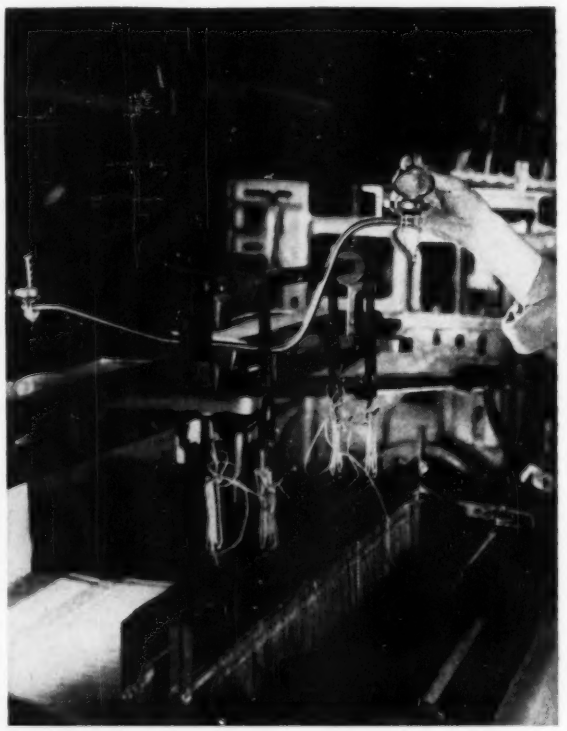
Static Eliminator for Looms Prevents Fabric "Fogging"

The Shirley radioactive static eliminator (RASE) has been brought up to a commercial scale by the British Cotton Industry Research Assn. and is being manufactured by Record Electrical Co. Ltd., Broadheath, Altrincham, Cheshire, England, in cooperation with Isotopes Developments Ltd. Its purpose is to prevent dust and lint in the air from being attracted overnight or on weekends to cloth of synthetic yarns in the process of being woven or knitted.

The active element, which is kept in a cup up out of the way when not in use, consists of thallium, specially treated to render it radioactive. When it is hanging in position over the warp ends or cloth, it emits beta rays that ionize the surrounding atmosphere sufficiently to render it conductive to static charges. Thus static generated during weaving and held within the loom at stopping time is drained off, and dirt in the air is not attracted.

When the radioactive units are in their cups during the time the looms are operating, operators are safely screened from the radioactive rays. All that is needed for 100% safety is that the operator be sure to grasp the eliminator by the rod at the back and to return it to its brass cup when it is not in use.

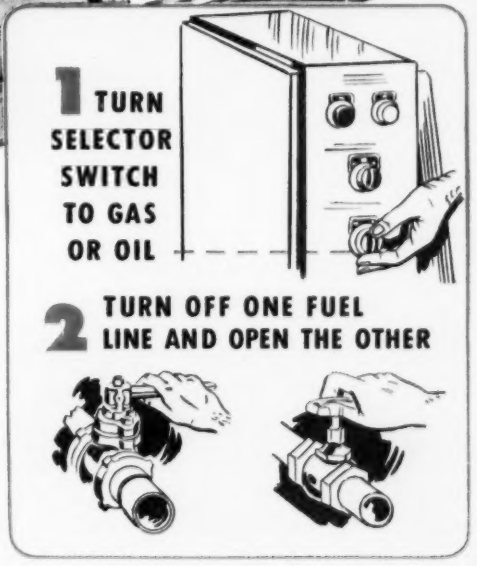
Circle T-10 on Reader-Service Card



RADIOACTIVE ELEMENT draws static off from the loom and keeps lint from being attracted to the fabric. It hangs down by a chain when in use.

NOW... interchange Gas and Oil firing in *10 seconds*

Modern Cleaver-Brooks Model LR Steam Boiler Equipped with Exclusive Cleaver-Brooks "10-second conversion" Combination GAS and/or OIL Burner



TWO, simple motions eliminate time-consuming change-over

Now you can use oil or gas at the flick of a switch! This exclusive new Cleaver-Brooks development permits changeover from oil to gas or vice versa in only 10 seconds.

That's because the Cleaver-Brooks Combination Gas and/or Oil Fired Boiler operates on gas *with the oil burner in place*. Simply flipping a selector switch on the control panel to either gas *or* oil sets the proper circuit in action. Turning the convenient fuel supply valves completes the entire changeover — and in 10 seconds or less!

To gas users in all parts of the country — and in particular areas where local requirements demand immediate changeover — this exceptional fuel flexibility can be an important factor in determining your overall operating economy.

Ten-second conversion, like 4-pass construction, self-contained design, guaranteed 80% efficiency, is another "plus" feature pioneered by Cleaver-Brooks. It demonstrates Cleaver-Brooks' continuing effort to bring steam users even greater flexibility and reduced operating costs.

If you are considering simplifying your present boiler plant, remember Cleaver-Brooks Combination GAS and/or OIL Fired Boilers. Sizes 15 to 500 h.p. — 15 to 250 p.s.i. Write for complete facts.

Cleaver-Brooks

Originators of the Self-Contained Steam Boiler

CLEAVER-BROOKS COMPANY
Dept. G. 361 E. Keefe Ave., Milwaukee 12, Wis., U.S.A.
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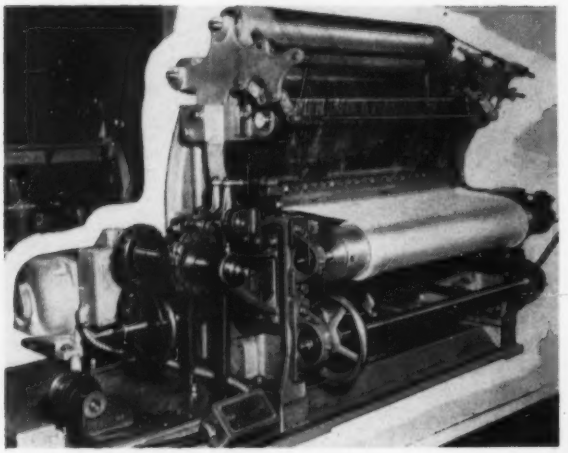
Builders of Equipment for the Generation and Utilization of Heat • Steam Boilers • Oil and Bitumen Tank-Car Heaters • Distillation Equipment • Oil and Gas-Fired Conversion Burners

Sample Tricot Knitter Has Adjustable Gauge



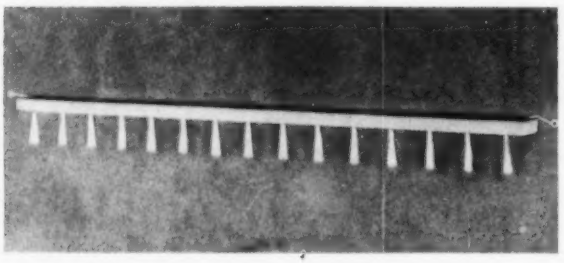
TRICOT KNITTING of any yarn in standard use is possible with the 3x2x4-ft. Samplette machine developed by Bearing Products Co., 3339 Lancaster Ave., Philadelphia 4, Pa. Gauges from 14 to 32 are possible. Changeovers are made by replacing index buttons, guides, sinkers, and needles.

The sample knitter is powered by a ½-hp. motor. It can also be operated by hand wheel. It can be equipped with a variable speed motion to slow the knitting speed down for observation purposes.

The pattern chain can be set up from a minimum of 16 buttons on up to any desired length.

Circle T-11 on Reader-Service Card

Electrostatic Neutralizer Is Safe and Economical



NO CONNECTIONS OR DANGER are involved with the new static neutralizer that energizes itself and lasts a long time without attention.

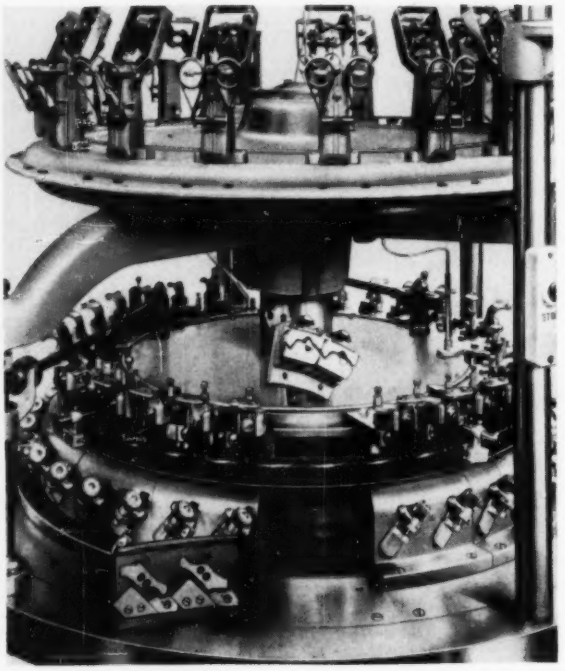
A self-energizing induction neutralizer of simple design but good effectiveness has been introduced by Herman H. Sticht Co., Inc., 27 Park Place, New York 7, N. Y. Called the Magic Wand, it needs no external source of power.

Advantages of the neutralizer are described as low cost, small space requirement, no electricity requirement, no health hazard, long service life, no maintenance cost, no sharp points to injure stock in process or bruise employees, effective neutralization of static at any processing speed, and low electrostatic capacitance.

The new neutralizer can be used at many points during the processing and finishing of fabrics, especially with the newer synthetic types.

Circle T-12 on Reader-Service Card

Multifeed Ribber Outproduces Interlock Unit by 7 to 4



TO SYNCHRONIZE THE DIAL AND CYLINDER STITCH CAMS in producing 2/2 rib, a special stitch cam is fitted that, when reversed, brings the dial and cylinder knock-over positions in line. Thus the position of the dial camplate does not have to be altered. Above, the left-hand stitch cam is in the 1/1-rib position and the right-hand stitch cam is in the 2/2-rib position.

A new rib machine, the 4RLAM, has been introduced by Mellor Bromley & Co. Ltd., Leicester, England, designed to knit lightweight elastic underwear and certain classes of outerwear at an improved rate of production. It can outproduce an interlock machine of the same diameter by 7 to 4.

Needle cylinders vary from 9 to 30 in. in diameter. Gauges range from 10 x 10 to 16 x 16. The 17-in.-dia. unit has 24 feeders and the 22-in. cylinder has 32. Feeders are spaced at intervals of approximately two inches around the machine so that there are gaps that facilitate running on—a feature not often provided for on machines of this type.

A 17-in.-dia. machine, equipped with 24 feeders, 14 x 14 needles per inch, using 30s cotton, will produce 65 to 70 lb. of rib fabric in 8 hr.

A variety of tuck effects are available because of the increased number of feeders. A wide range of horizontal striped fabrics, in 1/1 or 2/2 rib, can be produced. Single ribs can be knitted with delayed timing on the dial.

The necessity of moving the dial camplate for the production of 2/2 rib fabrics has been overcome by fitting a stitch cam of special design that, when reversed, automatically synchronizes the dial and cylinder stitch cams.

Further information on the rib knitter, including a 26-in.-dia., 38-feed, 14-cut unit that is being produced for the American trade, is available from Mellor Bromley Group, Inc., 432 Fourth Ave., New York, N. Y.

Circle T-13 on Reader-Service Card

JACOBS

PLYWELD® Loom Necessities
TAKE PUNISHMENT!

Outlast Hickory 15 to 1

SERRATED HOOKS
For Draper Pickers on Plyweld Sticks. Eliminate troublesome screws, easily adjusted.

SWEEPSTICKS
Streamlined for balance and resiliency.

POWER STICKS
Outlast fiber and wood many times.

HOLDUPS
Designed to meet any Holdup problem.

PICKER STICKS
Guaranteed for longest service.

CLOTH ROLL BLOCKS
Durable.

SWELLS
For increased efficiency.

BOTTOM BOX PLATES
Custom-made for long life.

RACE PLATES
Uniform throughout.

Only JACOBS makes PLYWELD®
U. S. Pat. No. 2,503,711

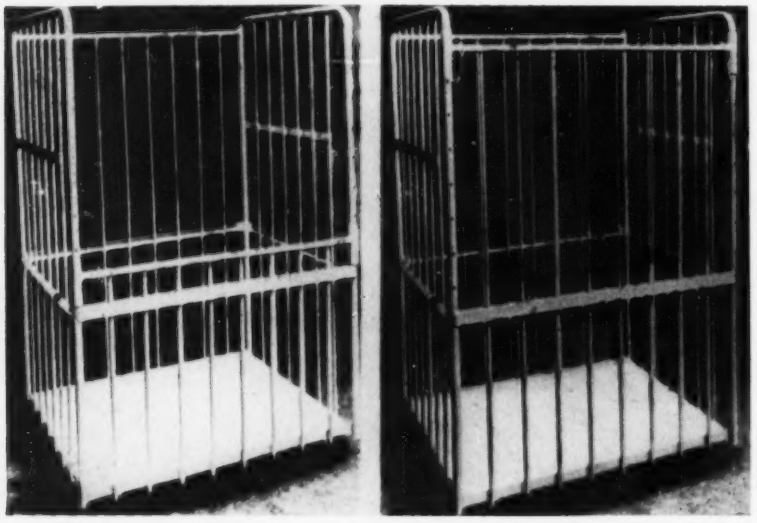
THE BULLARD CLARK CO.

JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

Bundle Truck Has Telescoping Side

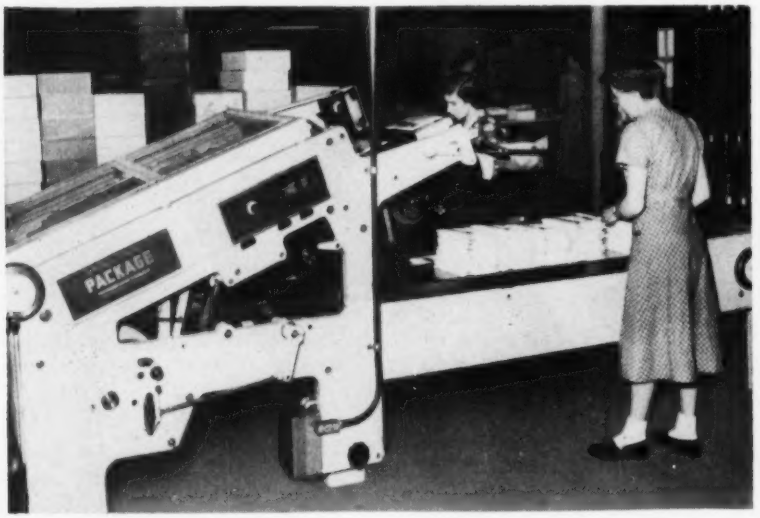


EASE IN LOADING and unloading is provided for by the collapsible side of the BND-Series bundle truck that is manufactured by Leebaw Mfg. Co., 65 Wayne St., Youngstown 2, Ohio. The side has stops every six inches to the top for partial closing. The truck is of all-welded steel construction.

Outside dimensions of the line range from 32x42 to 32x62 in. Height above the 4-in. swivel casters is 55 in. Three of the models have a vertical-bar construction; three others have 6x6-in. mesh. The floor, of cleated wood, is removable.

Circle T-14 on Reader-Service Card

Wrapping Machine Requires Only One Operator



PACKAGE SIZES ranging from 4 to 16 in. in length, 2 to 9½ in. in width, and ⅜ to 5¼ in. in height can be accommodated on a new textile wrapping machine that is being produced by Package Machinery Co., East Longmeadow, Springfield, Mass. This unit is known as the Model Universal-6.

Goods may be on flat cards, trays, or in cartons. Products may be wrapped without any card at all. Either plain or printed wrapping material may be used. When printed material is used, an electric-eye registration device comes into play.

The machine has a self-measuring wrapping-material feed. A single hand wheel sets the machine for size before the beginning of the run.

Circle T-15 on Reader-Service Card

Worm Take-Off Drive Unit Fits Shafts to 1 In.

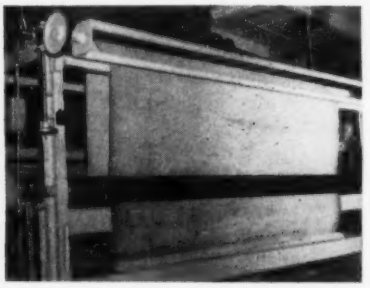
LOCKING BALL DRIVE is incorporated in the drive so that the assembly can be fitted right on the shafting and will drive without any trouble.

A small right-angle worm drive for application on knitting and other textile machines, as well as on general industrial machinery where a worm take-off drive is required, has been announced by Durant Mfg. Co., 1929 N. Buffum St., Milwaukee 1, Wis. It is designed to fit shafting from ⅜ to 1 in. in diameter.

The drive has no external projection of the worm beyond the small housing. The entire assembly can be placed on the shafting, closed in by bearings without disassembly of the shaft or drilling of the shaft. An Alemite grease fitting is provided for easy lubrication.

Circle T-16 on Reader-Service Card

16-Ft. Carpet Brush Weighs Only 300 Lb.



BRUSH CORE is a hollow steel tube into which pressed-steel ends are inserted in this 9-in.-dia. carpet brush, 16 ft. long and weighing only 300 lb., which is manufactured by Industrial Brush Co., Inc., Little Falls, N. J. Bristles are 18-mil.-dia. nylon, projecting 1½ in. from the winding strip.

The steel cores are as light in weight as solid metal cores. They can be rebristled when the brush has worn down.

Circle T-17 on Reader-Service Card

Supreme's "Family Resemblance" simplifies profit knitting

LT/SAAF Regular and Long Loop Terry Stripes
LRP "Vent-Knit" mesh fabrics
SR Plain and Swiss Rib
SA/AF Variable Striped and Patterned Jersey
ROF Jacquard-Type Floatless Patterns
MJ Wide and Body Size Jersey
ML Pile, Loop Terry and Plush

The knitter-mechanic who knows one Supreme model finds it easy to get acquainted with the rest of the "family"

A basic similarity of construction and operation makes it simpler for him to get maximum production from every Supreme. It means quicker set-up, easier maintenance, less down-time. Net result . . . lower production costs and higher profit.

Supreme's uniformity of design makes possible the interchangeability of many parts. This is some of the secret behind Supreme's convertibility feature which enables several models to switch from one kind of fabric production to another.

Another aspect of Supreme's "family resemblance" is the technical assistance that goes along with every Supreme to help make them a family of "profit-knitters" for you.

Ask for complete free information on any of the Supremes shown here.

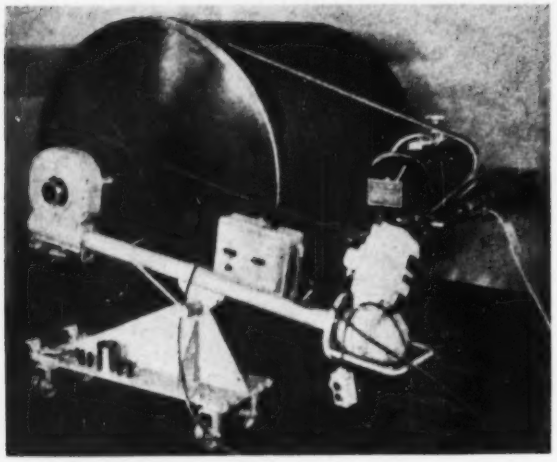
Some Of The Mill Proven Features You'll Find In Every Supreme—

Stationary Yarn Stand • Smooth, Acting Revolving Cylinder and Dial • Maximum Precision Feeds • Patented Multi-Disc Clutch • Revolving, Floating Take-Up • Rugged Tripod Construction • Rugged, Smooth-running Silent Chain Drive.

SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom:
The Malluck Co., 711 S. Tryon St., Charlotte, N. C.

SK-167

 For more information, write direct or use Reader Service post card.



FIFTEEN MINUTES TO WIND A CYLINDER and the impossibility of losing tension are the two big talking points of the new power winch designed for card-room use.

Power Winch Cuts Cylinder-Winding Costs in Half

A new power winch has been developed by Davis & Furber Machine Co., North Andover, Mass., for rotating main cylinders and doffers when new card clothing is being wound. With a new unit of this type, at least two men are released for duty elsewhere; so the labor cost of winding card clothing is reduced by half.

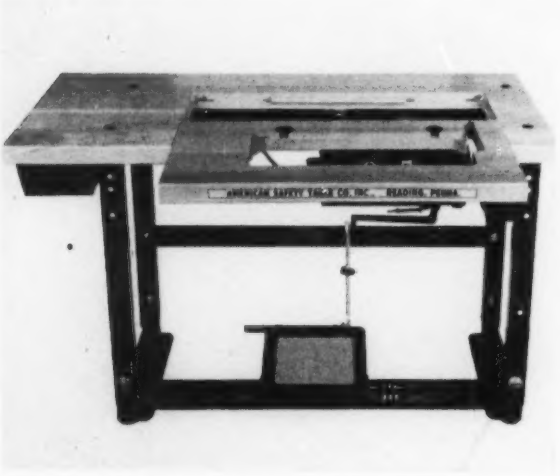
The machine makes it possible for two men to wind a 60-in.-wide cylinder in 15 min. The rest periods ordinarily necessary during winding by hand are eliminated.

In the event the winch is stopped during winding of the fillet, no tension is lost. The unit is self-locking. Constant tension is controlled automatically by the company's card-clothing tension machine (which is used in combination with the power winch). The previously set tension continues with no slippage in starting up again.

The winch, 14 in. wide, is portable. Shafts with centers from 17 to 45 in. above the floor can be driven. All moving parts are enclosed. The winch can be reversed when space limitations require the winch to be set up backwards, and it can also be "inched" along.

Circle T-18 on Reader-Service Card

Sewing-Machine Changeovers Speeded by New Table



INSERT TABLE TOP makes it possible to switch sewing machines quickly as complete units and thus save on downtime.

To aid sewing rooms in their search for additional flexibility, American Safety Table Co., Inc., 721 N. 8th St., Reading, Pa., has developed its new Amco Uniflex table. (Uniflex denotes "universal flexibility.") The new stand offers several advantages over older models:

1. The top of the stand consists of two parts, the first a permanent table board cut to accommodate an insert, and the second the removable insert section itself. The operator simply slides out the insert section of the table top with the machine attached and slides in another insert to which a different machine is attached.

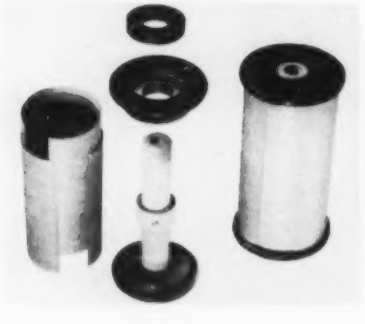
2. Flexibility in the table top is achieved through a bar mounting under the table for the sewing-machine motor, an arrangement that makes it possible to slide the motor on the bar to any position that is needed to coincide with any type of machine on the insert section.

3. Items such as the thread stand, light fixtures, stand pipe for the feedrail connection, and drawer can be attached to the permanent section of the Uniflex top so that these items do not have to be removed at the time of a changeover.

4. The insert section accommodates the sewing machine and all its component parts. There is no need to detach the drip pan (if used), knee lifter, and bobbin winder when machines are changed.

Circle T-19 on Reader-Service Card

Collapsible Bobbin Eases Nylon-Winding Problems



RESIDUAL-SHRINKAGE VARIATIONS are eliminated when nylon yarn is wound on these collapsible bobbins that eliminate the restrictions on the number of turns per inch you can put in the yarn.

A new bobbin for nylon yarns, consisting of dual collapsible tubes of paper-based laminated plastic, has been perfected by Synthane Corp., River Road, Oaks, Pa. The collapsible bobbin not only holds residual shrinkage differentials of nylon yarn constant within ½ of 1% throughout the package but also has already slashed some mills' preshrinking costs by as much as two-thirds.

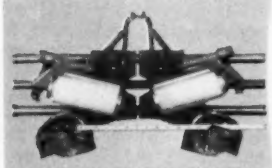
From each of the two tubes that serve as the bobbin barrel, a segment is cut lengthwise. The inner tube is equipped with flat stainless-steel springs that resist compression. The cuts in the outer tube are finished to a fine edge to minimize barré marks.

The assembly contracts slowly as the

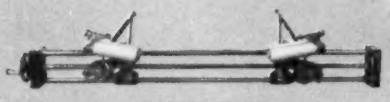
Mount Hope
PRECISION GUIDERS

Always
Get Super-Smoothness
Without Fail!

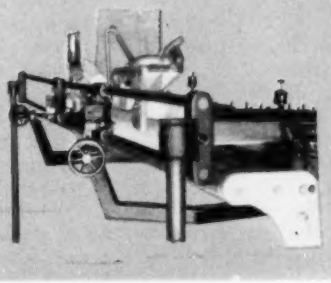
GUIDER HEAD

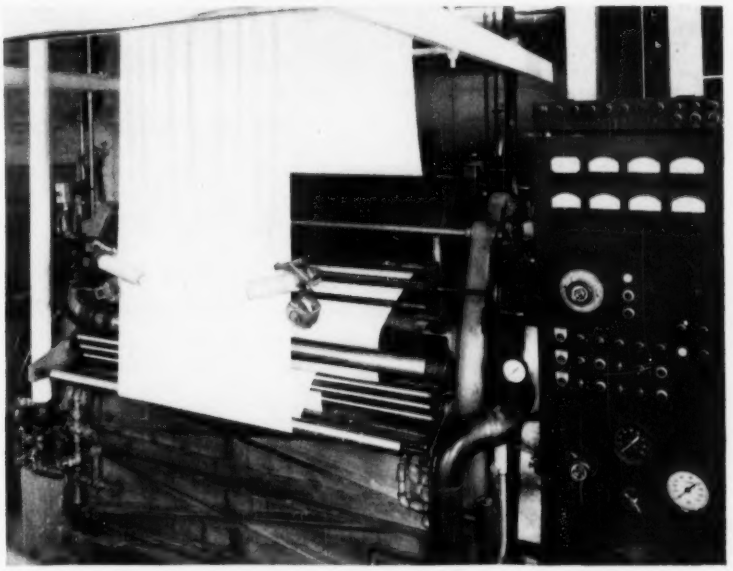

NARROW FABRICS GUIDING

FLOOR STAND


BRACKET STAND

TENTER STAND CLIP TYPE, OR PIN TYPE WITHOUT ELECTRIC FEEDERS




(Illustration shows Mount Hope Precision Guiders guiding cloth into the new Vapojet Dryer at the Cliffside Dyeing Corporation, Paterson, N. J.)

NOTE Smoothness of material as it leaves "Precision Guider" heads — which maintain accurate alignment, and insure smooth wrinkle free feeding.

If you have not yet seen the gentle, positive, purely mechanical operation of Mount Hope Precision Guiders, have a Mount Hope Representative arrange a demonstration at your convenience — no obligation!

MOUNT HOPE
MACHINERY COMPANY
15 FIFTH STREET, TAUNTON, MASS.

tightening of the yarn demands it.

The new unit can be used in the twisting of all nylon yarns. It eliminates the 12-turn restrictions on nylon skeins and the 5-turn limitation on nylon-filament yarns of 200 den. and over.

The bobbins are now in full production and are available in one- and two-pound sizes in diameters up to six inches.

Circle T-20 on Reader-Service Card

Rebuilt Needle Bars Cut Stripping-Maintenance Costs

Rebuilding of old needle bars that are removed from continuous strippers, because of either worn or broken needles, is now being done by Textile Mill Suppliers, Box 906, Columbus, Ga. By rebuilding old bars instead of scrapping them, mills are able to cut the maintenance cost on their continuous strippers better than one-third.

Worn or broken needles are taken out and replaced with new needles, and the whole bar is realigned and refurbished before it goes back to the mill to get into production again.

Circle T-21 on Reader-Service Card

TEXTILE EQUIPMENT NEWS—Continued on page 270

NEW Dyes AND Chemicals

Nonionic, Nonsubstantive Softener Has Many General Uses

A new finishing agent, Morofin R, made by Moreland Chemical Co., Inc., Spartanburg, S. C., is one of a new series of products developed for the textile trade. It is a completely saturated fatty polyester and is supplied in the form of an easily dispersable white paste.

Morofin R can be used in combination with other sizing and finishing materials. Being nonionic, it is compatible with and stable in the presence of acids, bases, and electrolytes in the concentrations normally used in textile processing. It is compatible with and acts as a plasticizing agent for a wide variety of starches, gums, and resins.

The makers also claim that the product is completely saturated and therefore will not develop odor, rancidity, or discoloration.

Circle D-1 on Reader-Service Card

New Flame Retardant Will Not Weaken Treated Fibers

A new flame-retarding chemical developed by E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del., known by the designation X-12, is said to have two unusual properties. The product will not weaken fibers after exposure to high drying temperature and will not cause browning or darkening of the material.

The new product is said to have a stabilizing effect on a number of dyestuffs by increasing the lightfastness. No noticeable stiffening is imparted to goods treated with X-12.

Circle D-2 on Reader-Service Card

New Fast Wool Dye Is First of Its Type

A German dyestuff firm, Farbwerke A. G., Hoechst, Germany, recently introduced the acid dyestuff Remalanbrillantblau B, which is the first representative of a new dyestuff class said to have excellent qualities of fastness. Bleaching and fulling resistance surpass all known acid-blue dyes for loose wool and yarns. Because of its chromium resistance it can also be used as a shading color for chrome dyes. It is said to be suited for polyamide fibers and certain types of polyacrylonitrile fibers.

Circle D-3 on Reader-Service Card

Dimethyl Formamide—Universal Solvent Has Found Many Uses

The unusual properties of DMF have made it the subject of much research by textile laboratories.

DMF has the property of miscibility with water, ether, ketones, alcohols, esters, and various hydrocarbons. This peculiar action allows DMF to promote solubility of many solids in various liquids and still give practical working viscosities.

Acrylics and vinyl resins dissolve to make clear solutions with excellent drying properties. Dyestuffs dissolve to a much better degree in DMF than in any other solvent on the market. Laboratory efforts are being directed toward finding more uses in this field.

The product is available in sample or tank-car lots from Rohm & Haas Co., Washington Square, Philadelphia, Pa., and from Grasselli Chemicals Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

New Dacron-Dyeing Carrier Allows Low-Temperature Dyeing

Dyeing of Dacron in full, deep shades at temperatures as low as 180° F. now appears possible, Interchemical Corp., Textile Colors Div., Hawthorne, N. J., has discovered. This development is a result of a continuing investigation on dyeing synthetics. The simplified procedure for dyeing Dacron with selected acetate dyes is essentially the same as for dyeing acetate and nylon, with the exception that phenyl methyl carbinol is added to the dyebath as a carrier.

This new method is said to provide full, deep shades on Dacron at 180° F. With carriers previously employed, it was necessary to dye at the boil. Dyes can be applied in a neutral bath, without necessity for pH control. They can also be applied in acid or alkaline baths, which procedure is particularly advantageous in union dyeing of blends such as Dacron-wool, Dacron-viscose, and Dacron-acetate.

Phenyl methyl carbinol does not have to be converted into its sodium salt before use as a carrier. This fact is not true of most other carriers. Because phenyl methyl carbinol is water soluble, it can be removed after dyeing simply by rinsing with warm water.

Dyeing time is reduced and savings in steam costs result.

The results reported to date are based on laboratory tests. It is believed, however, that some dyers of Dacron are conducting plant trials.

PFIZER CHEMICALS
for the
TEXTILE INDUSTRY
How Can They Help You?

PFIZER GLUCONIC ACID, Sodium Gluconate, Ammonium Gluconate and Glucono Delta Lactone are extremely mild, non-toxic and non-corrosive. The sequestering ability of the gluconate radical plus their mildness make them highly valuable to the textile industry. They make possible clearer, sharper colors in dyeing by inactivating trace metals and are used as iron sequesterants in kier boiling and mercerization. Ammonium Gluconate and Glucono Delta Lactone prove ideal as acid forming catalysts for printing pastes.

PFIZER OXALIC ACID ranks high in the textile industry as a remover of rust spots and as a bleaching agent. This acid and its derivatives are also utilized to advantage in the preparation of alum and chrome mordants for dyeing.

PFIZER CITRIC ACID AND SODIUM CITRATE are becoming increasingly important in many textile processes because they form water-soluble complexes with metallic ions, such as iron and calcium, in neutral or slightly alkaline solutions. Being a mild organic acid, Citric Acid is also of interest as an acidifier in dyeing.

Write Department T for Bulletins #6, "Ammonium Gluconate and Gluconic Acid in Textile Printing," #27, "Glucono Delta Lactone in Acid Colloid Resins," #33, "Gluconic Acid and Derivatives," #34, "Oxalic Acid."

CHAS. PFIZER & CO., INC.
630 Flushing Ave., Brooklyn 6, N. Y.
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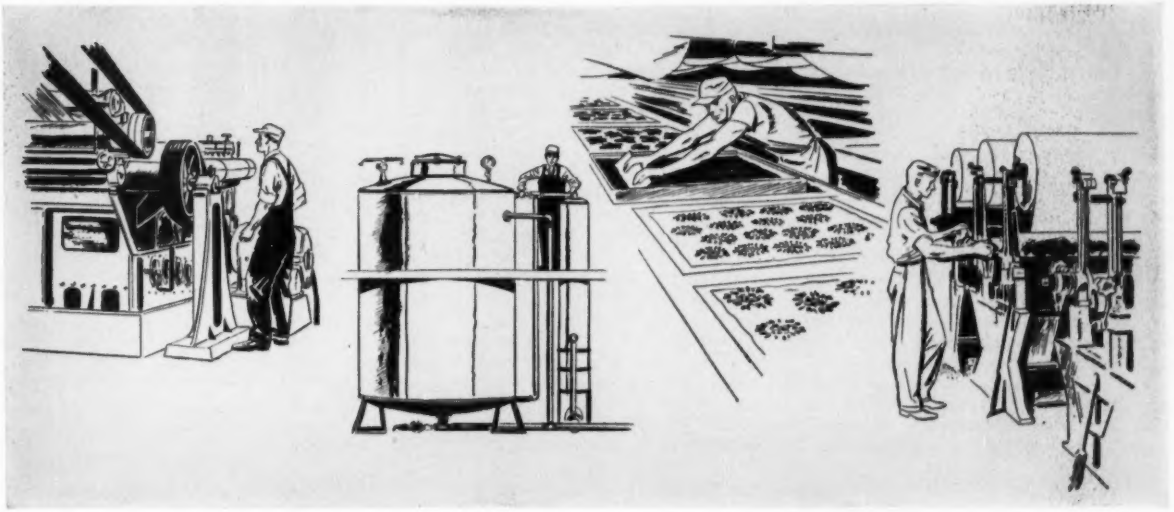


Manufacturing Chemists for Over 100 Years **Pfizer**

THIS IS NO. 99 OF A SERIES ON

GETTING THE MOST FROM TWISTING

Information about twisting glass yarn on Model 10 Ring Twister

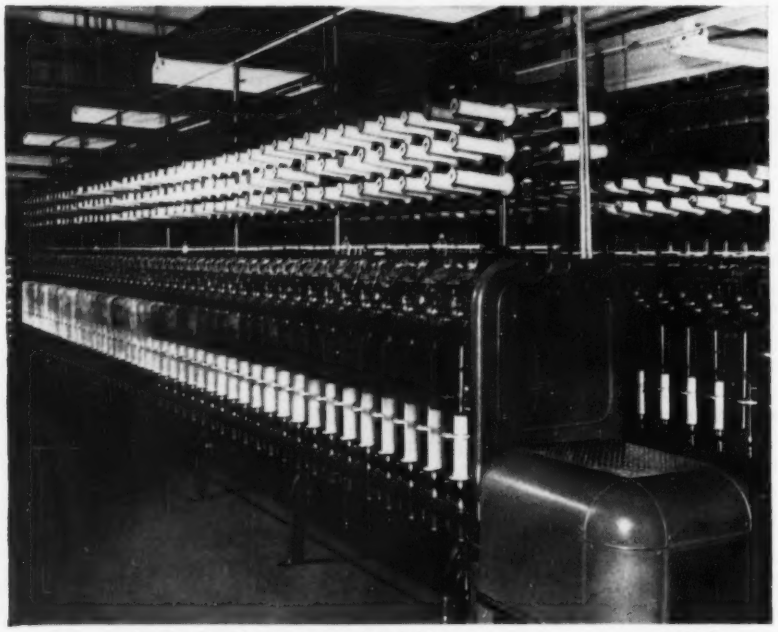


Figure 1. Model 10 Ring Twister plying glass yarn onto taper-top bobbins.

Glass yarn is playing an increasingly important part in textiles.

And side by side with the growing employment of this man-made product is the vital role being played in its processing by Universal Winding Company's twisting and winding machinery, both in the plants producing the glass fibers themselves and in the mills processing the yarns made of them.

Glass yarn receives its initial twist at the plant producing the fiber. The Model 10 Ring Twister is used for this operation, inserting twist in either a single or multiple number of ends, preparatory to plying or cabling them for industrial use or for use in decorative fabrics.

The packages it produces may have either taper-top, double taper or a straight wind. For shipping purposes, the yarn is put up on a paper pirn with a double taper build. For coning before shipping, a taper-top bobbin which holds a greater amount of yarn is normally used. However, any of these packages have been found suitable as a supply for winding the various type packages the trade may call for.

When glass yarn, twisted on the Model 10 Ring Twister, is put up on paper pirns, a pirn adapter is used on the twister spindles. In the next plying operation, these pirns can be used as a supply in the Model 10 creel equipped with another type of pirn adapter suitable for use in the creel.

When plying from the paper pirns, an unrolling delivery must be used except in cases where the glass yarn on the pirn contains only one turn of twist per inch. With this low twist, the yarn delivers overend satisfactorily.

Twisting practices are much the same with this yarn as with any others. Cleanliness, important when handling any type of yarn, is vitally important when handling glass yarn. Dirt marks and smudges cannot be scoured out of this material.

Travelers are selected on the same basis as for other yarns. The important consideration in their selection is, of course, the proper weight. Too light a traveler will permit the yarn to balloon out to such an extent that it will strike the separators; too heavy a traveler will split filaments.

Because of the nature of this material, travelers should be changed frequently; rings, too, should be cleaned more often. Also, any surfaces, over or through which this yarn may pass, require a more frequent inspection than that required when processing natural or most synthetic yarns.

When heavy plied yarns are being produced, splicing is done after the product is taken from the twister frame — during coning or tubing as the case may be.

When producing straight wind on double headed bobbins, they should be inspected frequently for nicks.

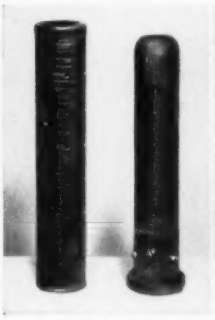


Fig. 2

Fig. 3

Figure 2. Paper pirn and pirn adapter for Model 10 Ring Twister spindle. A set screw near the base of the adapter attaches it firmly to the spindle blade.

Figure 3. Double tapered pirn of glass yarn produced on the Model 10 Ring Twister.

23.2.17

June, 1953

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

LETTERS FROM OUR READERS

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

Round Table

NOW, A BETTER SIZE FORMULA FOR DACRON

Dear Editor:

In answer to a reader's question (TW, April, '53, p. 274) you suggest a starch-polyvinyl alcohol size formula for Dacron polyester fiber.

Our laboratory and field research work over the past two years leads us to believe that the formula given below is vastly superior to the starch-polyvinyl alcohol formula that you propose:

Dacron Size (for 100-gal. mix)	
4 lb., 6 oz.	soda ash
60 lb.	Elchem 1273
4 lb.	Elvanol 5222, or
6 lb.	Elvanol 5105
15 lb.	softener (Nopco 1440 is recommended).*

% stretch, 0; size-pan temperature, 130 to 150° F; can temperatures, 170 to 200° F., last can cold; string up, immersion; approximate pick-up, 3 to 5%.

*Also recommended are Colloid 216, Keripon S., Standapol 51, and Penetrant 4.

R. L. RICE
Customer Service—Filament
E. I. du Pont de Nemours & Co., Inc.
Wilmington, Del.

HERE'S A GENERAL NAME FOR NEW FIBERS

Dear Editor:

If a new generic name is to be selected to encompass all man-made fibers, the name should be descriptive and all-embracing.

I would like to submit the following for consideration:

Cosmofac yarns
Homofac yarns
Homfac yarns

J. A. MARTINI
Sales Service Dept.
The Duplan Corp.
Kingston, Pa.

ACCURATE BLENDING

Dear Editor:

Everyone knows that the percentage of each fiber entering a woolen or worsted blend must be clearly stated on the fabric label. It is obviously in the manufacturer's interest to see that the percentages he claims to be present are correct; and yet it is easy to overlook one or two small points.

For example, blending wool top with rayon staple is often done in the drawing, or sometimes in blending gill boxes prior to drawing. A common method is to test the sliver weight and to feed the required number of ends of wool top and rayon-staple top to give the required percentages. And yet, unless several tops are averaged for the true sliver weight, inter-top variation may lead to error in the end product.

The safest method is to weigh out in sets, usually of 100 lb. Each constituent is accurately weighed out and each set run out so that there is no possibility of errors creeping in through sliver-weight variations. A further point to remember is the moisture content of the materials comprising the blends.

Even with all this care, there is no guarantee that all fibers in the blend will produce exactly the same amount of waste in drawing and spinning. Fiber breakage and the throwing out of very short broken fibers in the form of fly often varies from fiber to fiber and affects the final result.

Yorkshire, England H. M.

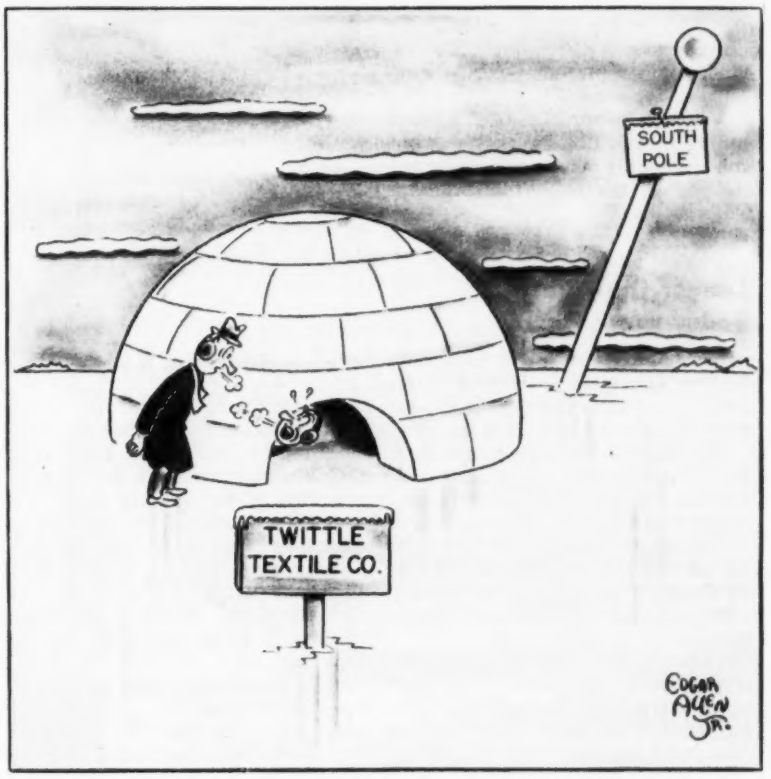
HOBBY-CONSCIOUS FOREMEN

Dear Editor:

Today the hobby-conscious foreman has an advantage over others not hobby-minded, for with his knowledge of outside interests in general he has a direct

(*Continued on page 227*)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"I think we're carrying this move to the South too far!"

Kinks AND SHORT-CUTS

Let Your Knit Goods Fall Into a Truck

We used to lay a sheet of stiff brown paper on the floor underneath each knitting machine to catch sweaters. At the end of each shift the operator stooped under the knitting machine to remove a draw-thread and pull the garments out.

To make this job easier and to keep the goods off the floor, we built a trolley to push underneath the fabric-take-up rolls.

The trolley is made from a shallow metal box with a caster bolted to each corner. The dimensions are such that the trolley can be pushed between the machine legs. Two handles are fixed to the sides of the trolley to allow the operator to pull it from under the machine and push it to the separating table to be unloaded.

We found that this method reduced soiling because the sweaters did not rub against the machine and were not handled by the knitter. *Dan Singer, Philadelphia, Pa.*

Longer Quill Cans Reduce Jerk-Backs

Our cans to catch empty filling bobbins on Crompton & Knowles looms used to be shallow and were positioned on a rack about 12 in. from the floor.

We lowered the rack to the floor and bought longer bobbin cans. The cans are the same size as the old ones except that they are 12 in. taller.

The empty bobbins have farther to fall into the new cans, and the cut tails of filling are pulled completely away from the cloth and into the bobbin cans.

There's another advantage, too: the empty bobbins don't have to be taken up so often. If the cans become too full, though, all the advantage of the eliminated jerk-backs will be lost because the bobbins will not have far to fall. *Bernard Dixon, Danville, Va.*

Self-Developing Camera Speeds Sample Production

A PHOTOGRAPH of the fabric is taken in the knitting room, and minutes later the picture is on its way to the customer.

Our problem was to get samples of cloth to our customers as rapidly as possible.

To speed up our customer service we used a Polaroid picture-in-a-minute camera to take photographs of the samples as they leave the knitting machine. One minute after the photographs are taken, the prints are removed from the camera and airmailed to our customers.

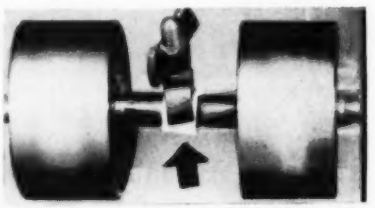
Nylon Bearings Keep Yarn Cleaner

Bronze bearings at Nathan Schwartz & Sons, woolen and worsted yarn manufacturer in Philadelphia, Pa., used to give lots of trouble. On the pressure-roll shaft of the spinning frame they required constant lubrication, speed varied, and yarn quality suffered.

Thin nylon bearings, formed at the mill from nylon strip made by The Polymer Corp., Reading, Pa., have eliminated production problems and grease splash.

The maintenance man at the mill cut small sections from a roll of nylon strip 2 in. wide and 0.025 in. thick and inserted them between the original shaft and the bronze bearings.

The nylon bearings have been running for about three years now without replacement, and the mill is satisfied with the results.



NYLON STRIP, cut at the mill, fits between the original shaft and the original bearing to eliminate lubrication splash on a worsted spinning frame.

Embossing

from plain to moiré
with one wonderful washfast resin

RHONITE R-I

For a wide range of calendered effects, from friction to deep embossing, from plain to moiré, RHONITE R-1 stands out among the new textile resins. Whether you use a plain, chasing, friction, Schreiner or embossing calender, RHONITE R-1 gives extra durability to the finish—even after repeated washings. Investigate the sure-fire way to put lasting appeal into all types of embossed fabrics with RHONITE R-1. Write us today.

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE *is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.*

Spring-Bottom Cans Have Side Windows

In one cotton mill, two kinds of sliver cans were used indiscriminately: common cans, indicated at a in the accompanying sketch, and spring-bottom cans, indicated at *b*.

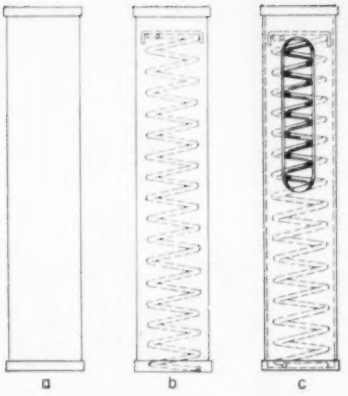
To find out which is the better type of can, I arranged to have the two kinds separated. Certain drawing frames were put on common cans, and certain others were put on the spring-bottom cans. The common can gave the better results.

The chief disadvantage of the spring-bottom cans was that the tender could never tell how much sliver was left in the can. He could not tell, without some trouble, about when a can would run out. As a result, he could not manage his job as easily as the operator on common cans could.

We were convinced that the theory of using spring-bottom cans was sound—that a more even pull on the sliver would be made from full to empty can. So I tried cutting a window in a can, as shown in c of the sketch.

With the window in the can, the tender could tell at a glance just how much sliver was left in the can.

The results were so satisfactory that we equipped the whole mill with that type of can. *S. T. Sorensen, Horsholm, Denmark.*



***SLIVER CANS** in one cotton mill were all equipped with spring bottoms and side windows so that the drawing tenders could always see how much sliver remained in the cans.*

We Use Shuttle Fur To Stop Jerk-Backs

The filling on the empty bobbin often drops so low in the filling recess in the lay-end shuttle box that the thread cutter fails to pick up the filling and jerk-backs are made.

When we find this condition, we glue a piece of shuttle fur in the shuttle-box recess to hold up the filling so the thread cutter can catch it.

Since we've been using the fur, we've had fewer jerk-backs. *Bernard Dixon, Danville, Va.*

Top-Roll Spinning Laps Removed With This Roll

A device that quickly and easily removes laps from a spinning-frame top roll can be made without too much difficulty in a mill shop.

A spinning roll covered with a cork or Accotex cot is mounted on a wooden arbor made to fit the inside diameter of the roll. In the center of the wooden arbor a hole is drilled lengthwise through the arbor for receiving a $\frac{3}{16}$-in. pin.

The ends of the $\frac{3}{16}$-in. pin extend about $\frac{1}{4}$ or $\frac{1}{2}$ in. beyond the ends of the arbor. A *C*-shaped holder, with a handle attached, is made of $\frac{1}{4}$-in. stock. When this has been done, eyes are made at the ends of the C holder for receiving the ends of the $\frac{3}{16}$-in. pin through the center of the wooden arbor. These eyes act as bearings in which the pin turns.

The lap remover is used as follows: When a top-roll lap occurs, the cork or Accotex cot of the lap remover is placed against the steel roll directly under the lapped top roll. The roll on the lap remover immediately begins to turn with the steel roll.

The lap remover is now moved up the steel roll until it touches the top-roll lap. The roll on the lap remover, driven by the steel roll, turns in the opposite direction from the lapped top roll at the point of contact with the lap. This reverse turning quickly "wears away" the lap.

The lap-remover cot can be buffed whenever it begins to show signs of wear. *Tony Kobosinski, Utica, N. Y.*

$500 for Best Kink in 1953
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

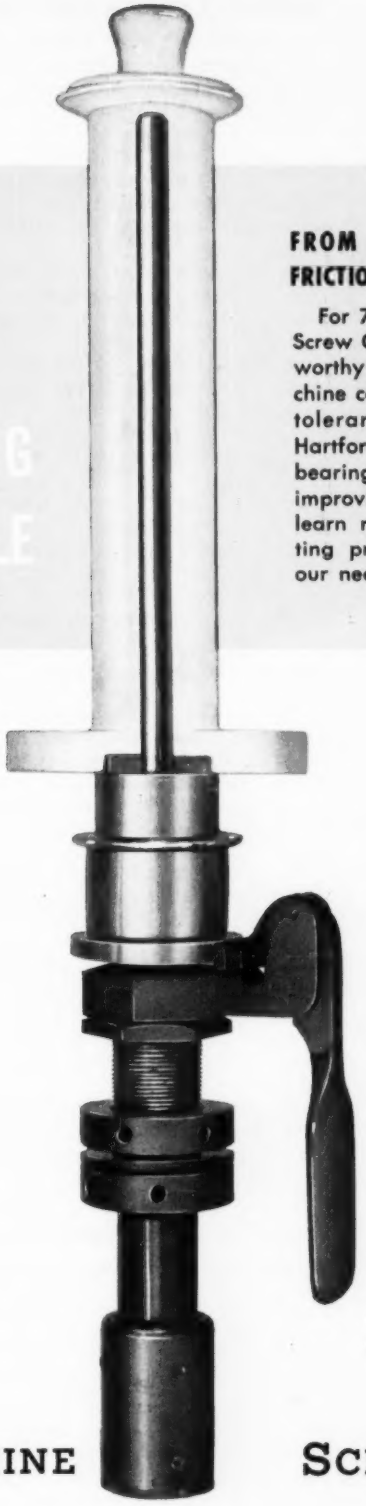
Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to selected preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

HARTFORD'S NEW BALL BEARING TWISTER SPINDLE



FROM A PIONEER IN ANTI-FRICTION SPINDLE MANUFACTURE

For 77 years Hartford Machine Screw Company has been a noteworthy producer of precision machine components, including close tolerance aircraft engine parts. Hartford manufactured early ball-bearing spindles, and has led in improving spindle design. You can learn more about these cost-cutting products simply by writing our nearest office.

ELIMINATES OILING

Pre-packed ball bearings need no attention for an estimated five years. Elimination of friction heat assures maximum r.p.m., saves motive power.

SMOOTHER RUNNING AT HIGH SPEEDS

a) Both ball bearings mounted in rubber

b) Plumb alignment controlled by knurled plug — you adjust while spindle runs

c) Smoothness assures more even yarn twist

NO SERVICE

— of any kind required for several years—grease-retaining bearings assure clean frames and clean yarn

CHROME PLATING

— on blade reduces wear

HEIGHT ADJUSTMENT FOR BOBBIN

— through adjusting collars, with which you control the height of bobbin seat

FINGER TOUCH STOPPING

Improved-design brake employs greater leverage, and provides extra large braking contact surface

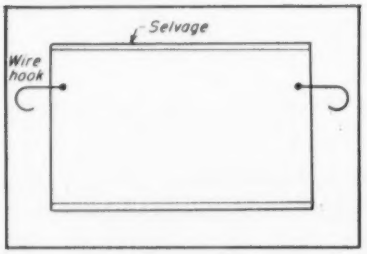
EXCLUSIVE!

You plumb this spindle while it is running — thanks to the exclusive eccentric adjustment controlled by knurled plug at base

HARTFORD MACHINE SCREW CO., INC.

HARTFORD, CONN. SOUTHERN DIV. 110 W. McBEE AVENUE, GREENVILLE

A Duck Cover Keeps Cloth Clean



OILY CLOTH IS ELIMINATED because the loomfixers place this duck apron over the cloth before they start to work on the loom.

Our loomfixers used to make a lot of seconds because they placed their greasy tools on the woven cloth when they were working on the looms. They also got oil on the cloth from their hands.

Now we furnish each loomfixer with a special piece of duck fabric to place over the woven cloth when he is working on the looms. The duck is 30 in. wide and is a few inches longer than the width of the woven cloth.

A wire hook is inserted at each edge of the duck about 12 in. from one selvage. These two hooks are fastened around the loom temples to hold the duck securely in place, thereby practically eliminating all spoilage.

Now that we cover the cloth with the duck apron, our seconds from oily cloth have been reduced.

Colored Rubber Bands Used To Identify Hosiery Sizes

Several methods of identification of sizes during the dyeing operation were used in our mill until we finally hit upon a method that proved practical and economical.

We use rubber bands of different colors, and since they are made from pure rubber they will last indefinitely unless they come into contact with oil. Each color denotes a certain size: blue is used on Size 9, yellow on Size 9½, etc.

Where several sizes are placed in the same batch, two or more bands are used for indentification. The bands, which also close the mouth of the bag, are placed in position at the preboarders. A small ticket stub showing the style and quantity is placed under the band at preboarding but is discarded before dyeing.

We like the rubber bands much better than strings because bands are easier to handle and save time.

Suction Pump Cleans Water Troughs

Regardless of what kind of water and solution are used in the water boxes of a full-fashioned hosiery machine, scum will accumulate after a period of time. Several things contribute to this accumulation:

1. Water in one locality may not mix as well with a particular trough solution as does water in another locality.

2. The solution has to be diluted from time to time as the separation of foreign matter builds up. More foreign matter may be added.

3. Size is stripped off the yarn and floats around on the trough solution with the other foreign matter.

4. Dust from the air collects in the troughs, particularly in mills that permit windows to be opened and in mills that do not have filters in their air-conditioning equipment.

The result is that the accumulation must be removed and the boxes cleaned occasionally.

The boxes and drip pans should be taken off the machine at least once a year and cleaned thoroughly.

The accumulated scum should be removed occasionally.

We remove the scum from our water boxes with the suction pump. A little of the solution is removed also; but if the operator is careful, the amount of solution lost in this way will be small.

The floats and steel rods in the boxes do not have to be removed. Care must be observed by the operator not to tangle the yarn.

The pump is mounted on a small platform equipped with casters. It can be pushed down the alley at the back or front of the machine (back preferably). Usually, one man can remove the scum from the troughs of a 32-section machine in about an hour.

The motor, pump, and tube are all attached to the lid of the container. When a job is finished, or when the can is full, the lid can be removed and the container emptied and washed.

Use a Let-Back When You Weave a Decorative Check

On our C-5 looms, we often run decorative checks. The filling in the body of the cloth is usually staple rayon, and the decoration filling is filament rayon. The smaller filament filling often shows a thin place in the woven fabric.

We put a let-back on the loom to stop the thin places. For a long time we used a let-back driven from the dobby, but we have recently made a let-back that works from the box-lifter lever.

The value of the let-back is that the pick gear does not take up when the decorative filling is being placed in the cloth.

We run our filament-rayon filling in the third and fourth shuttle boxes, and the let-back works only when these shuttles are in motion.

To make the let-back, we use an 18-in. lever cut from ¾ x ¼-in. strap iron. Two holes of ⅜-in. dia. are bored in one end of the lever to fasten it to the take-down pawl on the take-up motion (2 capscrews of ⅜-in. dia. fasten the iron to the take-down pawl). The other end of the strap iron is bent to a 90° angle 2½ in. from the end to form a lever over the box-lifter rod.

When the box-lifter level raises to level the third and fourth shuttle boxes with the race plate, the take-down pawl is lifted to keep the take-up gear from moving. The lever may have to be bent up or down to set the pawl correctly.

The cost of the let-back is small, and our cloth appearance has been improved since we've been using it.

Operator Uses Hand Lever To Stop Abbott Winder

The shipper with which the Abbott automatic winder is started and stopped is located at the head of the winder and is worked by foot. Since the carriage of the winder is moved around the frame by a chain, it is important that the machine be stopped instantly if anything goes wrong. If the machine is not stopped at once, expensive jam-ups may occur.

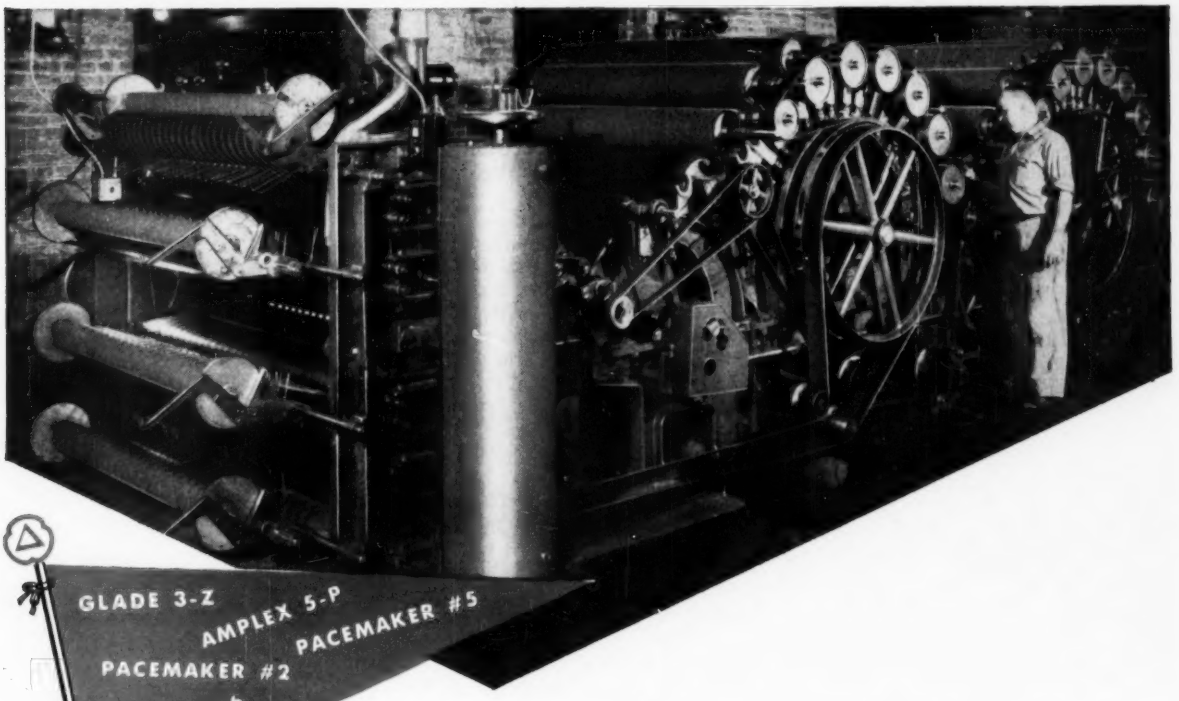
Often the operator is not in a position to reach the shipper lever with her foot. To provide a quick and positive means for the operator to stop the winder by hand, as well as by foot, we installed a lever that extends above the spindle rail.

Such a hand lever can be installed as follows:

Get a collar to fit the knock-off shaft. There should be two setscrew holes in the collar so that the collar can be held securely to the shaft. Use an old automobile gear-shift lever, or make a lever. Weld it to one end of the collar. Mount the collar on the knock-off shaft behind the foot lever, with the lever extending straight up inside the spindle rail when the machine is running.

To stop the machine, the operator only pushes the lever to turn the knock-off shaft. *J. B. Boyter, Dallas, N. C.*

COMPLETE JOB BY CITIES SERVICE LUBRICANTS ... Glade 3-Z keeps leather on rolls soft and pliable. Amplex 5-P is used for oiling line shafting, Pacemaker #2 on spindle bearings, Optimus #6 in steam cylinders, Pacemaker #5 in steam engine crankcase.

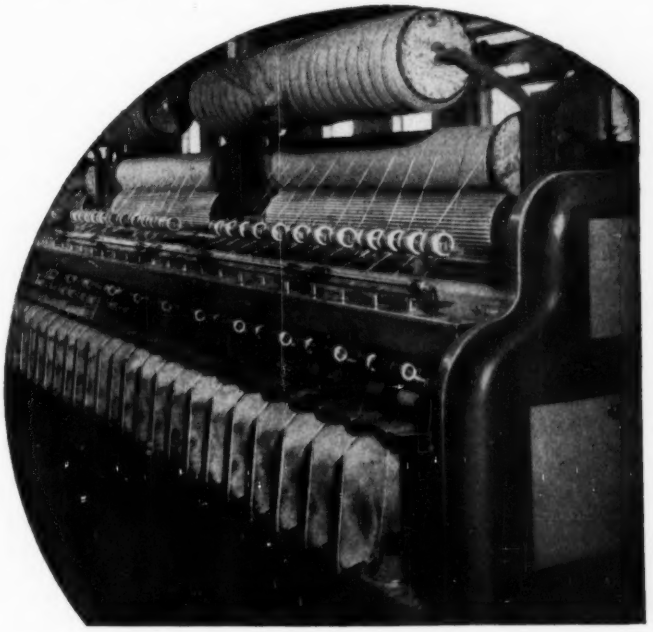


CITIES SERVICE LUBRICANTS *keep 'em rolling at* CAPITOL CITY WOOLEN MILLS!

Capitol City Woolen Mills, Des Moines, Iowa, is typical of the many fast-moving, successful operations that have found Cities Service the perfect source for industrial lubricants.

They called in a Cities Service Lubrication Engineer on a specific problem ... and they followed his advice, using the Cities Service Lubricant he recommended. As usual, the results were effective: THE CITIES SERVICE LUBRICANT DID THE JOB! ... did the job so well, that Capitol City Woolen Mills now relies on Cities Service Lubricants throughout its operation.

If you have a particularly tough problem, why not call in a Cities Service Lubrication Engineer. Try his product ... and then carefully check the results. You'll find, as did Capitol City Woolen Mills, that Cities Service recommendations make sense ... save dollars. Call your nearest Cities Service Representative, or write Cities Service Oil Co., Dept. F27, Sixty Wall Tower, New York City 5, New York.



 For more information, write direct or use Reader Service post card.

We Use a Finger To Turn Magazine Rotors

THIS LITTLE TRICK to turn magazine rotors can be attached to a C-4 loom in just 2 min. It takes only a short time to make it, too.

Our C-4 looms are mounted on a concrete floor, and the looms vibrate very little.

Since the rotors at the filling-end holder depend on vibration to turn, lack of vibration in our looms caused the rotors to release the filling ends. This condition resulted in broken filling at the transfer of the bobbins.

We use a simple arrangement to make our rotors turn constantly.

We grind the end off a regular binder spring and bore a 3/16-in. hole near the ground end.

A 1-in. square rubber block ½-in. thick has a 3/16-in. hole bored in the center. The hole is recessed on one side for the head of a 5/32x½-in. stove bolt.

The block is fastened to the binder spring with the stove bolt. The spring is screwed in a vertical position to the back of the lay end at the outside picker-rod stand. As the lay moves back and forth, the rubber block strikes the cross rod on the back of the magazine (the roter case is attached to the rod) and causes the rotors to turn.

As the binder spring can be easily bent, our finger can be positioned quickly.

We now have few dropped filling ends at the transfer. *Ernest Collins, Belton, S. C.*

We Put Extensions On Our Take-Up

When we knit bulky fabrics on our spring-needle machines, the take-up frames on the machines will not hold a roll large enough to give the required yardage on some cloth construction.

Under these circumstances, we do not replace the frames but only modify them to accommodate a larger roll.

The frame is cut off on both sides a few inches below the top crossbar. Steel inserts of the proper length for enlarging the take-up space are welded in the sides of the frame.

The welded joints must be smoothed and polished to prevent snags, and some attention to the adjusting rod may be needed.

Oil Holes and Pipes Cleaned With Wire

Open oil holes must be kept clean. Restricted passage of oil through pipes and other oil passages often leads to defective lubrication and wear of bearings and shafts.

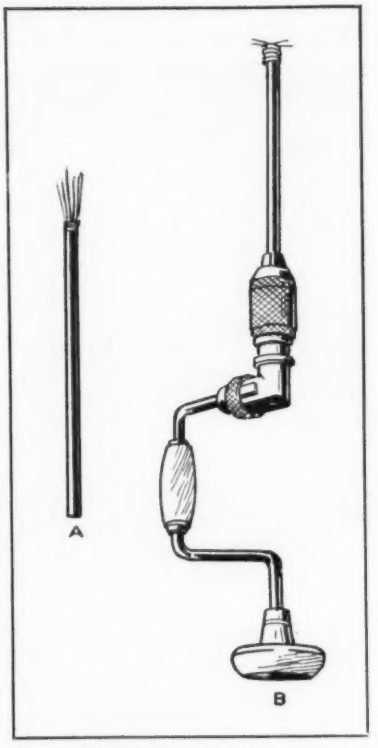
An effective tool for cleaning oil passages can be made of electric wire, as shown in the sketch.

Get a piece of household electric wire that consists of a number of small wires bound together with insulation. Strip the insulation back a short distance, and twist the exposed wires into a bundle small enough to go into the oil hole. Turn the wire a few times in the direction that it has been twisted to make certain that it has reached the bottom of the hole. Then turn the wire in the opposite direction.

The small wires will untwist and spread out. When they are pulled out of the hole, they will bring dirt and accumulated lint with them.

To clean an oil pipe that has a bend in it, insert the stripped and twisted end of the wire. Turn the wire and force it through the pipe.

To clean a pipe that is too large for ordinary household wire, mount a heavier wire in a brace, wrap the other end of the wire with copper gauze, and twist the wire into the pipe. *W. E. Warner, Essex, England*



OIL HOLES and pipes used for oil passage can be cleaned with household electric wire, shown at *A*, or heavier wire, shown at *B*. The wire is twisted into the hole or pipe and then twisted in the opposite direction and withdrawn.

Skein-Straightening Arm Is Driven From Winder

We use a device to shake out the skeins automatically. Since it can be fastened to a winder or coner, the operator can speed up her work by placing one skein on a swift while the shaker prepares another skein.

We use a device to shake out the skeins automatically. Since it can be fastened to a winder or coner, the operator can speed up her work by placing one skein on a swift while the shaker prepares another skein.

The device is made as follows:

Two pieces of board a few inches longer than a wound skein are used for a frame to support the skein straightener. The boards can be braced at the ends by other pieces of board, and one of these braces can be used for bolting the frame to the winder or coner.

Two skein-support arms, made of wood or metal, are mounted to the frame at the proper distance apart. The bottom arm is fixed; it serves only as an arm to hold the skein during the reciprocating action of the upper arm. The upper arm is bowed up slightly in the middle so that yarn will tend to move toward each end. It is not fixed to the stand but rests in up-and-down slots in the two pieces of board.

On the outside of each of these slots, a pin is inserted through the upper arm to prevent it from sliding in and out of the slots.

A metal lifting arm is attached to the shaft of the upper arm between the two boards. This lifting arm extends about 6 or 8 in. down from the upper arm and has a flattened end. The under side of the end serves as a face to work against a four-point lifting cam.

The cam is mounted on a bracket bolted to the wooden boards and is driven by a spinning band from the winder or coner. As the cam runs, its points raise the lifting arm attached to the upper skein-supporting arm. As one point of the cam passes off the end of the rod, the lifting rod drops down on the next point.

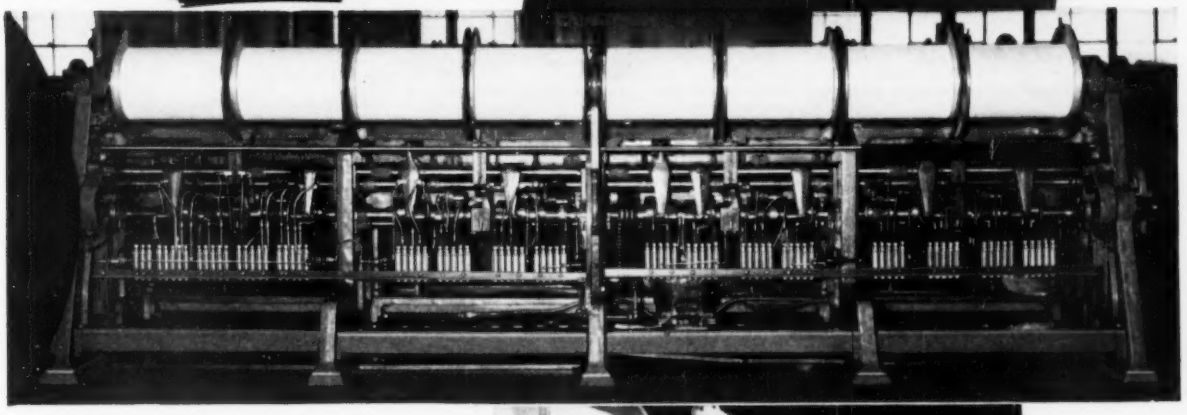
The up-and-down action of the lifting rod is transferred to the upper skein arm and shakes the skein out straight.

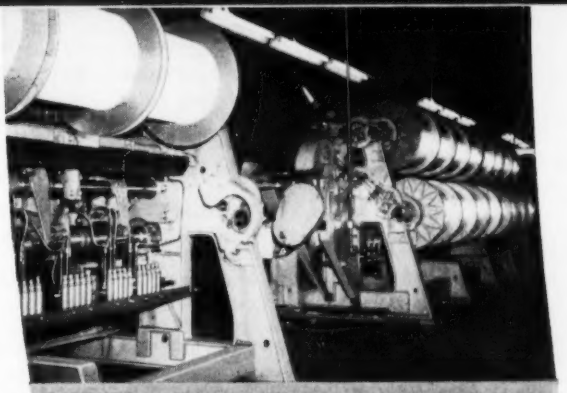
AT KONIT MILLS

PRODUCTION WAS INCREASED 22%

POWER COST REDUCED 20%

when *Lincoln* Centralized LUBRICATION SYSTEMS WERE INSTALLED





Lincoln System Paid For Itself In 90 Days... through increased production and lower operating costs. That's the phenomenal record that resulted from the installation of an automatic Lincoln Centralized Lubrication System on tricot knitting machines.

This is one of many hundreds of textile mills where Lincoln Centralized Lubrication Systems have helped to increase yield from existing facilities, and reduce operating costs by applying the right lubricant in the right quantity, at the right time — automatically while machines are operating.

Lincoln's Lubrication system specialists will be glad to give you additional information — and help you select the lubrication system best suited to your needs.

Write for your FREE copy of Catalog 80. It describes the complete line of 22 Lincoln Centralized Systems.

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Best-Kink Award for April

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

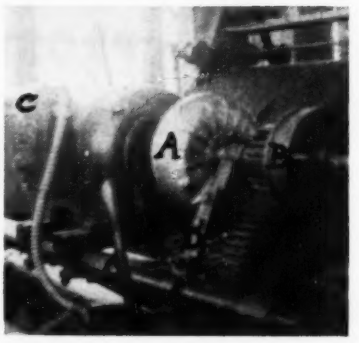
The best Kink for April, according to TEXTILE WORLD reader-judges, was:

"Five Ways To Reduce Ends Down on Roving Frames"

By Ernest Helliwell, 6 Coffin St., Newburyport, Mass.

Mr. Helliwell is being sent a check for $25 with the compliments of TEXTILE WORLD.

Hydraulic Coupling Smooths Beamer Operation



TWIN-DISK DRIVE at *A* now drives through the permanently fastened clutch at *B* from the control panel *C*. Extra support for the shaft comes from brace *D*.

We Turn Endless Checkstraps And Have Doubled Their Life

We like endless checkstraps, but like slotted checkstraps, they always break on the power stroke.

We decided to turn the straps around every month in an effort to make them last longer. We soon saw that the straps lasted longer when they were turned around.

We now turn the straps every month. The first week in each month the loomfixer turns one-third of the straps on his section. He turns a few of the straps each day and completes the job in five days. We break the job down into days because the shuttle boxing is disturbed and the friction finger sometimes has to be reset when the straps are turned.

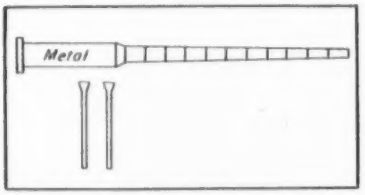
To turn the straps, the loomfixer uses his hands and does not loosen the friction fingers with a wrench.

After more than a year of turning the straps, we find that our checkstrap life has been doubled.

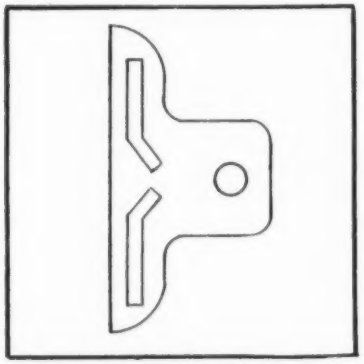
We were always having trouble with our beaming-off machine—the clutch was either grabbing or slipping and wearing out.

We have now done away with this clutch and have added a hydraulic coupling. This coupling gives an even, gentle start and eases the strain on the yarn, whereas the old friction-type clutch started abruptly and very often snapped ends. *Leslie D. Hayter, Huntington, P. Q.*

Machine Box Guide To Run Larger Shuttles



THE LARGE FILLING PACKAGE placed the metal ferrule out of line with the feeler wires.



THE OUTSIDE BOX GUIDE was machined to permit the shuttle to enter deeper in the shuttle box.

For a long time we wove silk tie fabrics on our C&K looms. Now we're weaving drapery goods.

We use staple-rayon filling in the drapery material; and since this filling is larger than the silk filling, we used to have to replenish the filling in the loom often. We now use a larger package of filling to make it run longer, but to use a larger bobbin we have to use a larger shuttle.

When we made the change, the large shuttle did not box closely and the electric feeler did not contact the metal ferrule of the bobbin. This condition resulted in run-out filling.

To make the shuttle box closely enough to correct the trouble, we removed the outside box guide from the loom and machined the shuttle stops to $\frac{1}{16}$-in. thickness. This machining permits a deeper penetration of the shuttle in the shuttle box, and now the feeler wires operate on a larger surface of the metal ferrule on the bobbin.

With these changes we can run the large filling package without any trouble. *George Lischer, Allentown, Pa.*

Ball-Bearing Sleeve Held by Lug on Collar

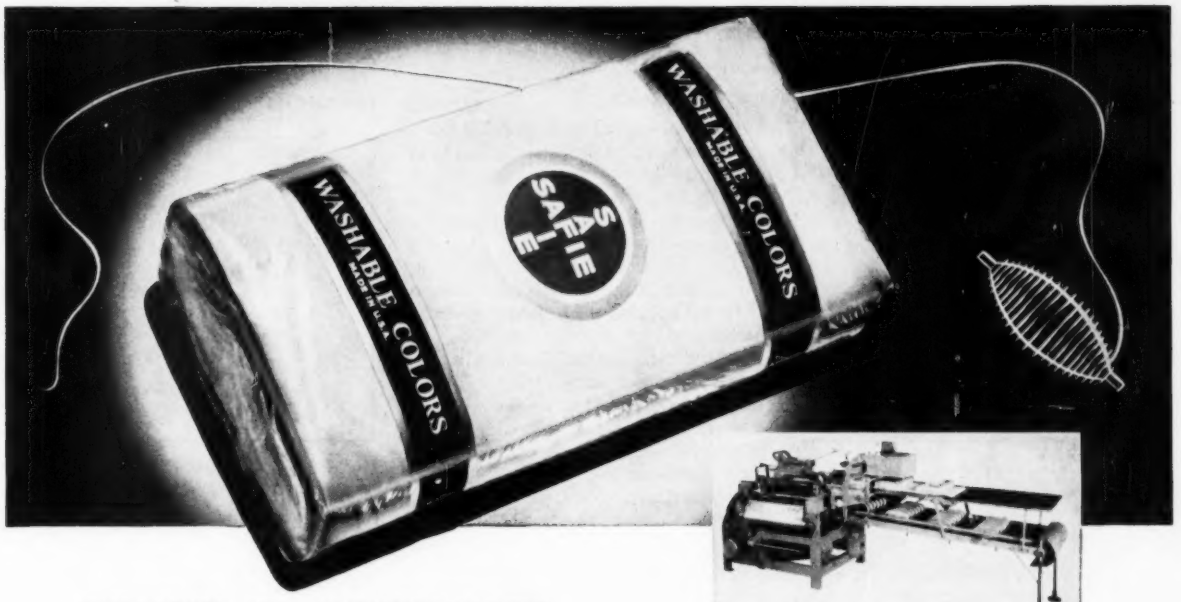
Some types of ball bearings use eccentric sleeves for tightening bearings on the shafts. The life of these bearings can be increased if the eccentric sleeve is kept from slipping.

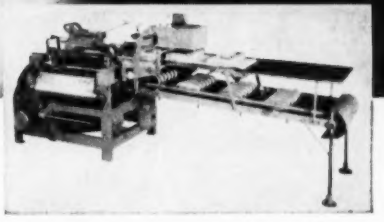
On woolen spinning frames, we find that if the bearings are properly lubricated and kept tight on the shafts, they will run for a long time without attention. Slipping eccentrics often cause worn shafts and, at times, broken cylinder heads and sprocket chains. This breakage of parts costs money for replacement and also causes loss in production.

To prevent this eccentric slippage, I cut a slot with an emery wheel $\frac{3}{4}$ in. wide and $\frac{1}{16}$ in. deep in the end of the eccentric sleeve. This slot does not injure the bearing in any way.

A small lug of metal is welded on the side of the eccentric collar. The lug must be made large enough to be ground down to fit the slot cut in the eccentric sleeve.

The collar is placed on the shaft with the welded lug in the slot, and the Allen setscrew is tightened against the shaft. No sleeve slippage can occur.





MILLIONS OF FAMOUS-NAME TEXTILE PRODUCTS wrapped on Hayssen Automatic WRAPPING MACHINES

Save half your money . . . own a Hayssen Automatic Textile Wrapping Machine. A Hayssen unit costs you less than you think and occupies about half the usual floor space. This machine wraps 35 or more packages per minute with one operator. You get a neat, tight, uniform package with electric-eye registration of printed overwrap . . . extra protection for your product and increased sales appeal. The Hayssen Wrapping Machine is easy to adjust and simple to maintain.

A FULL LINE OF MACHINES WRAP

Sheets, Pillow Cases, Bolts of Fabrics, Curtains, Underwear, Shirts, Towels, Handkerchiefs, Hosiery, Batting, Yarn

The Hayssen Textile Wrapping Machine handles heat-sealing cellophane, pliofilm and polyethylene. It overwraps cartons, trays, flat cards and u-boards . . . handles the most delicate fabrics and fluffy material like cotton and wool bats. Special attachments (electric eye, roll-type top labeler and printer, card or u-board feeder) are available.

Over 42 years' experience gives Hayssen machines unmatched performance, low first cost, overall economy of operation and maintenance. Many Hayssen units are in use today that were purchased over 20 years ago.

WRITE for folder on Hayssen Textile Wrapping Machines. Tell us your wrapping problems —we may have the answer.

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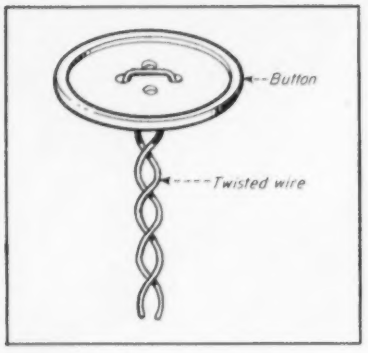
Yarn Catch on Cones? Try Wired Buttons



BUTTON wired into cone tip keeps yarn away from damaged tips.

Cracked or damaged cone ends often cause yarn breakage or damage. I use a button and some wire to keep yarn away from the cone end.

I take a 3-in. piece of thin wire and thread it through a button of about $\frac{5}{8}$-in. diameter. Then I twist the ends of the wire together and stick the gadget into the end of the cone.

Yarn rides over the smooth rim of the button and keeps clear of the damaged cone tip. A few of these antifoul buttons are within easy reach of every operator so that all doubtful cones can be fixed. *W. M. Scott, Enfield, England*

Turnbuckle Jack Strap Replaces Leather Straps

Leather jack straps on looms sometime present a problem when it is necessary for them to be tightened. Considerable time is required for the loomfixer to make precision adjustments.

When the leather stretches or adjustment is necessary for other reasons, the procedure is to loosen the buckle and pull it up to the next notch in the belt or punch a new hole in the leather strap.

A new type of jack-strap fitting has been designed by Paul Ray, Borden Mills, Inc., Kingsport, Tenn. It has proved successful and is considered a marked improvement.

A turnbuckle effect is obtained. In resetting the jack strap, a lock nut is loosened, and the bracket operating on the lever is slipped off the lever and turned for proper adjustment. The lock nut is then tightened.

This new design in jack straps affords precise and quick adjustment and makes cleaning much easier.

Aluminum Surface Tinned Quickly

Soldering aluminum joints is hard because an oxide film forms so rapidly that the solder will not adhere to the aluminum. Ordinary cleaning is ineffective for removing the oxide film to permit a satisfactory union of the aluminum and solder.

The usual practice is to heat the aluminum enough to melt solder that is applied unheated. A satisfactory solder consists of 90% tin and 10% zinc used without a flux. The solder does not adhere to the aluminum; it only builds up as globules and must be cleaned of oxide before it will form a satisfactory tinned surface that can be further soldered. The practice is to let the solder melt and then scrub the surface with a stick of aluminum to remove the oxide film and to cause the solder to adhere to the aluminum. When the surface is satisfactorily tinned in this manner, soldering can proceed.

I have found a better way to tin the surface to be soldered. The principle is the same as that usually used, but in practice the tool I use makes the tinning job considerably easier.

The tool consists only of a handle into which a stick of aluminum and surrounding stiff steel wires are inserted. The end of the aluminum and the ends of the wires scrape the surface that is to be tinned. The handle provides a convenient means for applying pressure.

The surface can be tinned much quicker and easier than with only an aluminum stick. *W. E. Warner, Essex, England.*

A Chart Helped Us Reduce Weave-Room Seconds

In reviewing our weave-room seconds, we found that 25% of our looms were making about half of our seconds.

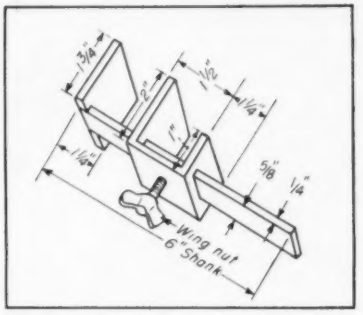
We made a chart to help us keep a record of the looms that were repeating on seconds. The chart is posted in the weave-room office where all the supervisors can refer to it at any time.

The chart is revised daily by our secretary from a cloth-room report of seconds.

The supervisors study the chart for seconds on their groups of looms and then check the looms and correct the loom-motion fault to eliminate any further seconds.

Our seconds have been substantially reduced since we began using the chart.

Any Machine Shop Can Make This Inexpensive Shuttle Gauge



THIS GAUGE IS STURDY and will measure shuttles accurately because the slide is double.

We make our shuttle gauges six at a time in our mill machine shop.

The body of the gauge is made from steel stock 8 in. long, $1\frac{1}{4}$ in. wide, and $\frac{1}{4}$ in. thick. The gauge is machined down $\frac{5}{16}$ in. on each side for 6 in., and this leaves a 4-in. tongue $\frac{3}{8}$ in. wide. The large end is heated and bent to a 90° angle just over the machined part.

Another piece of the steel stock $5\frac{1}{2}$ in. long is used to make the slide for the gauge. It is heated and bent to form a U-shaped slide 2 in. high and $1\frac{1}{2}$ in. across. All the bent surfaces are machined square on the inside.

The slide is bored and filed to form a $\frac{5}{8}$x$\frac{1}{4}$-in. slot at the bottom center of each side. The bottom of the slide is bored and tapped for a $\frac{1}{4}$-in. machine screw. A cross bar $1\frac{1}{2}$ in. long is welded to the head of a $\frac{1}{4}$x$\frac{1}{2}$-in. machine screw to form a thumb screw.

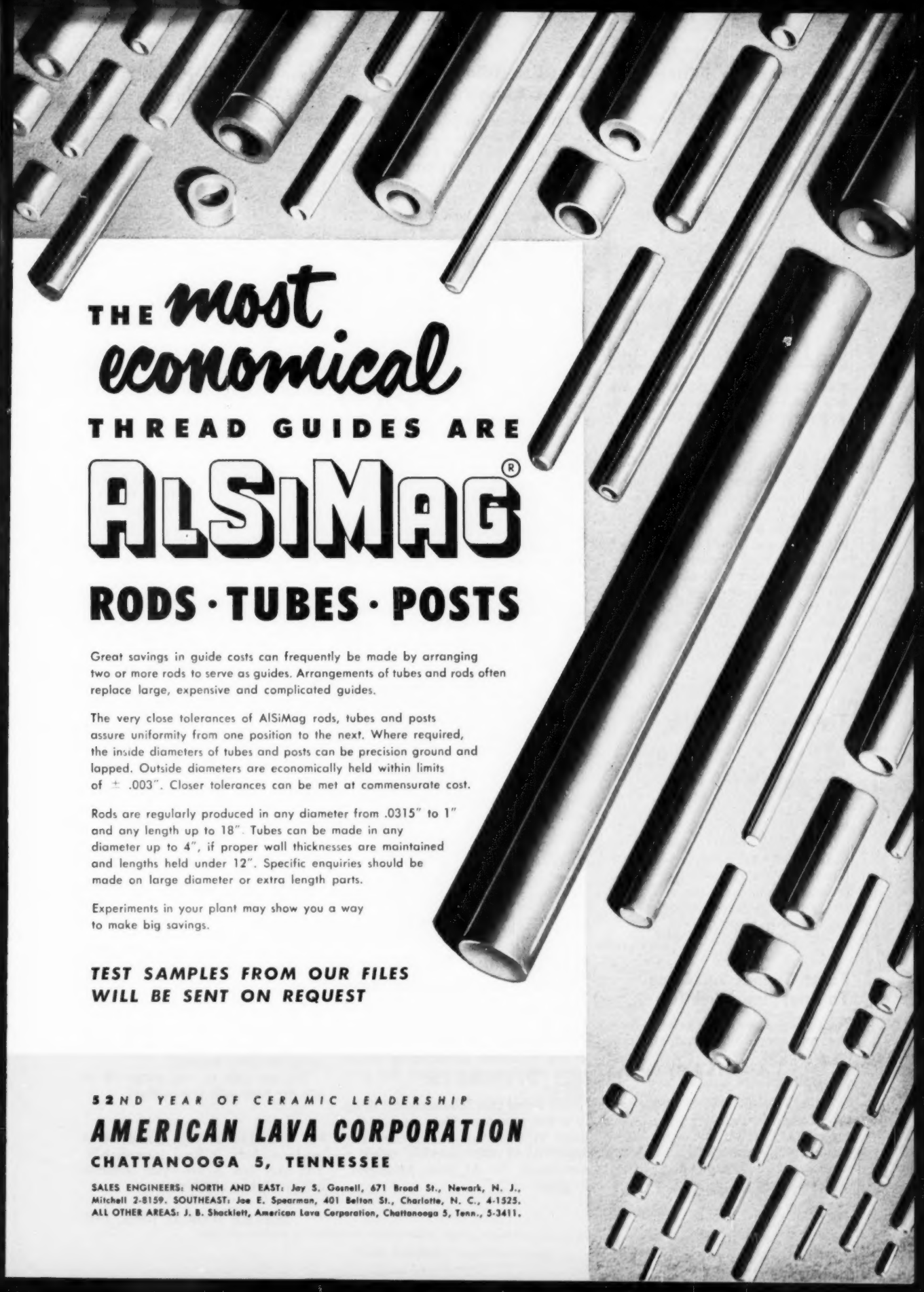
With the tongue of the gauge inserted in the slide, the thumb screw will hold the slide in any position to gauge the width of shuttles.

Tape Holds Selvage Ends

Here is a good way to keep warp selvage ends straight until they are tied in the loom.

Place a strip of tape across the yarns in the selvage about 1 yd. from the end. Then you should pick out the individual yarn ends, starting at the inner edge of the selvage and working toward the outer edge. Place them through the drop wires and heddles.

When all the ends have been entered, remove the tape and pull the ends until the place where the tape was stuck is pulled through the reed.



THE *most economical* THREAD GUIDES ARE ALSIMAG®

RODS · TUBES · POSTS

Great savings in guide costs can frequently be made by arranging two or more rods to serve as guides. Arrangements of tubes and rods often replace large, expensive and complicated guides.

The very close tolerances of AlSiMag rods, tubes and posts assure uniformity from one position to the next. Where required, the inside diameters of tubes and posts can be precision ground and lapped. Outside diameters are economically held within limits of ± .003". Closer tolerances can be met at commensurate cost.

Rods are regularly produced in any diameter from .0315" to 1" and any length up to 18". Tubes can be made in any diameter up to 4", if proper wall thicknesses are maintained and lengths held under 12". Specific enquiries should be made on large diameter or extra length parts.

Experiments in your plant may show you a way to make big savings.

TEST SAMPLES FROM OUR FILES WILL BE SENT ON REQUEST

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AMERICAN LAVA CORPORATION

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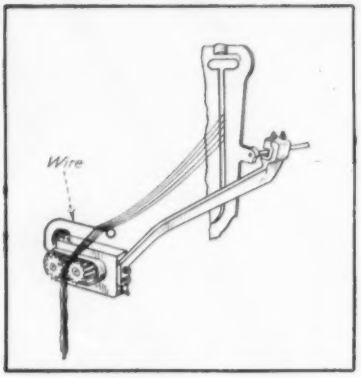
SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411.

Stop Breaking Filling On the Transfer



PLACE THE WIRE under the filling ends to keep slack ends from dropping down on the lay end, where they become broken.

To prevent broken ends on the transfer, we placed a stiff wire on all our filling-end holders to hold up slack filling.

The wire is bent underneath the filling ends and should be low enough to let the ends thread up on the transfer. We check the wires occasionally to see that they are in the correct position.

Our filling breaks on the transfer have been reduced since we started using the wires. *Bernard Dixon, Danville, Va.*

Tighten Tool Handles

Tools with plastic handles often become useless due to the tool shank turning or otherwise loosening. The handles can be tightened as follows:

Remove the tool from the handle. Fill up the tool hole in the handle with floured resin. Now heat the tool shank to near cherry red and insert it into the resin-filled hole. Let the tool gradually cool. In a few hours, the tool will be as firmly imbedded as it was originally.

Paint Stripes on Cans To Increase Visibility

Can you glance down a row of cards and tell immediately if all the cans are rotating? If there's a zebra stripe painted on the can, you'll have no trouble.

Paint a 4-in. band of white near the top of the can, and then paint bright diagonal stripes on the white background. You can still use any stock identification you want. *A. Cordeiro, Bombay, India*

Size-Box Idler Roll Keeps Lumps off Yarn

Hard size on warps is often caused by lumps in the size box. Sometimes the lumps were never broken up during cooking, but more often they result from cooking size congealing.

When one of the lumps travels on the yarn and is squeezed by the first pair of squeeze rolls, it is usually flattened out and sticks to several ends of yarn. When the yarn is dried on the cylinder and the sheet is split, heavy deposits of size appear on the yarn ends on which the lump was mashed.

We have eliminated practically all lumps of size on yarn by the addition of an idler roll to our size box.

The normal yarn travel from the size-box immersion roll is direct to the nip between the first squeeze roll and copper roll. With yarn traveling at such an incline, size lumps do not shed easily from the yarn sheet.

We changed the travel of the yarn from the inclined plane to a vertical and a horizontal plane. A $1\frac{7}{8}$-in. idler roll was installed above the size level to take yarn vertically from the immersion roll and deliver it horizontally to the squeeze roll.

The vertical line of yarn travel does not permit lumps big enough to cause trouble to remain on the warp sheet.

Another advantage to the use of the idler roll may be important in many cases.

In the normal inclined line of travel, the yarn is pulled over the copper roll that is about half sunk in size. This roll stays hot, the temperature depending on the temperature maintained in the size box. When the slasher is stopped, the yarn lies against this copper roll. In some cases, there may be danger of the heated roll damaging the yarn.

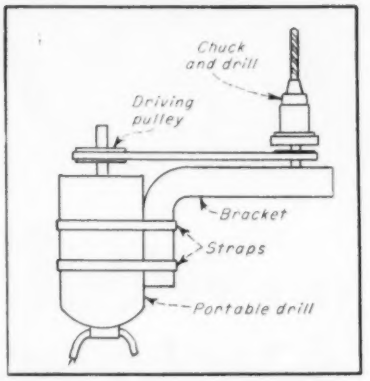
Since the idler roll holds the yarn off the copper roll, except in the nip between the copper roll and squeeze roll, its use may save yarn damage.

Use Cellulose Paint To Fix Your Porcelain Eyes

We used glue to secure the porcelain eyes in our knitting machines but found that glue took several hours to dry. Careless threading-up would often dislodge them before the glue had set.

We found that cellulose paint dried in a few minutes. Now we buy the paint in small low-priced cans and apply it to the porcelain with a matchstick. *W. M. Scott, Middlesex, England*

How We Drill Holes In Awkward Places



OFFSET ARM for portable drill is made with an L-shaped bracket, steel strapping, two pulleys, and a short belt.

Ever have to drill a hole in some place where the drill wouldn't fit or was very hard to handle? Here's a gadget we rigged up for just such cases.

Our drill attachment makes a motor out of the drill base, which drives the offset chuck by means of a pulley.

To make one yourself, separate the motor from the drill and chuck. Get an L-shaped piece of cast iron and strap the motor to one arm with steel straps. (The length of the size of the bracket is determined by your own requirements.) Set the working part of the drill into the other arm of the bracket as shown in the sketch, and then fix up the drive with a couple of pulleys and a belt. Now you're in business and all ready for those hard-to-reach jobs. *W. E. Warner, Essex, England.*

Cut Your Warping Costs When You Knit Tricot Nets

If the runner lengths are the same for both bars, we knit short orders of tricot nets on our two-bar machines with only one beam.

On a net requiring a warp entry of 1-in, 1-out, we make a full back beam.

We take the yarns for the front guides over the back tension bar and over the guide-supporting beam. The yarns for the back guide are threaded up in the usual manner.

We are able to run warps off in half the time with this method.

► If you find a loose guard on a machine, have it fixed immediately. You may save a life—you certainly will prevent an accident.

Atlantic
"PRINTING"

Solutions • Double Solutions • Powders

For dresses, drapes, washables, flannels, corduroys, shirtings

Yellow GS
Yellow GG
Golden Yellow R
Scarlet RS
Red GS
Red GSB
Red R
Bordeaux BN
Violet B
Brown PT
Brown 2G
Golden Brown 4G
Blue BN
Blue D
Blue GB
Black 2B
Black GR

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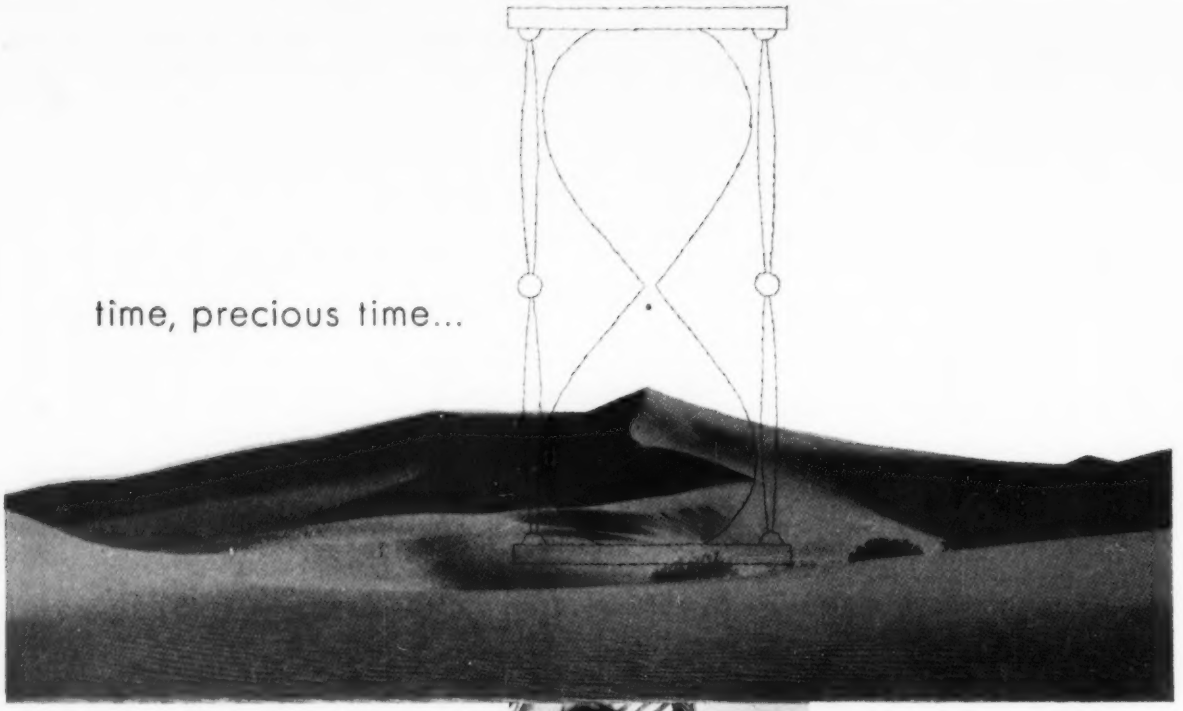
time, precious time...



No gift so precious as the gift of time. Time to relax. Time to have fun. Time to think. Time to grow. And no contribution of modern science has given modern women a richer bounty of time in the hand than Du Pont's modern-living fibers. Nylon, "Orlon," "Dacron"... here are fibers that widen the textile world's horizons, fibers that open the door to what your customers want today. Fabrics that save precious minutes day-long, year-long—fabrics that wash faster, dry faster, need less ironing, fabrics that wear longer, save on shopping, fabrics keyed to the busy pace of today's lives . . . engineered *right in the fibers* to enrich modern living with the boon of extra time. You can count on Du Pont's vast fiber research to answer *your* problems in developing and selling fabrics keyed to the way your customers live today!

Du Pont's Modern-Living Fibers

NYLON | RAYON | ACETATE | ORLON® ACRYLIC FIBER | DACRON® POLYESTER FIBER

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. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

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New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

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Dear Editor: **This Card Expires August 31, 1953**

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. JUNE, 1953

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. JUNE, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for June are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Uptwisters for ply-twisting and cabling tire cord are described in a bulletin prepared by Platt Bros. Ltd. and made available by Atkinson Haserick & Co. The ply-twister takes a 4½-lb. package and delivers a 9-lb. package for the cabler by winding two ends. Twist range is 4½ to 53 tpi. and spindle speed is 5,250 rpm. on both machines. **(F-1)**

A hosiery-mending machine is described in a bulletin put out by Southern Mill Equipment Corp. The Speedomask mender has a speed of 1,200 to 2,800 stitches per minute, a capacity of 300 to 500 repairs per 8 hr., and a five-speed control pedal. **(F-2)**

A warping machine and loom for making samples of about 20 in. width are described in a bulletin put out by Interstate Textile Equipment Co. The warper creel holds 35 cross-wound cheeses or 40 cones, and the loom runs at 82 rpm. **(F-3)**

Mauser Special industrial sewing machines are described in a catalog put out by Industrue-Werke Karlesruhe. The machines have maximum speeds of 2,100 to 5,000 stitches per minute, depending on the model and application. The applications cover tricot, regular-knitted, and woven fabrics. Detailed specifications are given for each model. **(F-4)**

A cotton ring-spinning frame and twisting frame are described in a bulletin prepared by Nationale Cogne. The characteristics of the frames are included in tables. The features of the spinning frame are lever-controlled draft change, spring roll pressure, four-spindle tape drive, and Leblanc-Roth draft assembly. **(F-5)**

Bleaching rangettes for small plants and sample lots are a feature of the first issue of a bimonthly publication of Rodney Hunt Machine Co. The continuous ranges are built in both Du Pont and Becco styles. The publication mailing list is open to users of process equipment. **(F-6)**

A weft viewer is described in a bulletin from Mount Hope Machinery Co. A viewer operates in conjunction with a weft straightener and has a scanning-mirror and stationary-mirror combination that shows any distortion of the cloth roll. **(F-7)**

AUXILIARY EQUIPMENT

Electric and pneumatic controllers of process variables are described in a catalog put out by Brown Instruments. Detailed specifications, control action, and ratings are given, and data on control relays is included. **(F-8)**

Automatic control of chemical feeders is discussed in a bulletin from the Foxboro Co. The instruments described are designed for a Pulsafeeder pump and control the concentration or pH. **(F-9)**

A universal tester with a fabric-gripping fixture is described in a bulletin from W. C. Dillon & Co. The tester has a working range of 0 to 100 lb. and an accuracy of 0.5%. **(F-10)**

Telemetering is the subject of a bulletin put out by The Bristol Co. Process variables can be controlled from a distance with telephone circuits, private wires, carrier circuits, and radio. **(F-11)**

Ovens for process heating are described in a bulletin prepared by Jensen Specialties, Inc. Sections are included on materials handling, temperature cycles, and available fuels. **(F-12)**

A manual control that operates in conjunction with an automatic process control system is described in a brochure put out by The Swartwout Co. The manual control indicates controller output, which reflects valve travel, in percentage of full output, and is used when the process is started up or when the automatic control is inoperative. **(F-13)**

Filters for oils, water, chemicals, and coolants are described in a bulletin put out by Dollinger Corp. The filtering element is of radial construction and is cotton, Vinyon, glass, nylon, or Orlon fabric, or felts to suit the particular filtering need. **(F-14)**

Electric counters that can be used for counting quills on winders are described in a bulletin from Durant Mfg. Co. A photoelectric control unit that is used in conjunction with the counters is also described. **(F-15)**

Recording and indicating electric tachometers are described in a bulletin from The Bristol Co. The tachometers measure process time, speed of rotation or travel, ratios, sums or differences, or averages of speeds. **(F-16)**

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Reader Service (Continued)

Temperature recorders are described in a bulletin prepared by The Foxboro Co. The bulletin explains the component parts of the instruments and the characteristics of the systems used to measure temperature—vapor pressure, gas pressure, and liquid expansion. **(F-17)**

ENGINEERING AND MAINTENANCE

An electrical maintenance program is presented in a bulletin made available by Westinghouse Electric Corp. The program is based on the renewal parts, repair, engineering, and field services offered by Westinghouse. **(F-18)**

"Valves of Iron" is the title of a bulletin from The Fairbanks Co. Specifications are given for gate, globe, and check valves that range from 125 lb. of steam to 500 lb. of water, oil, or gas. **(F-19)**

A nozzle used to measure liquid flow with or without suspended matter is described in a bulletin from Builders-Providence, Inc. Made in sizes from 6 to 36 in., the nozzle is used with standard indicating and recording instruments. **(F-20)**

Oil burners for building heat are featured in a bulletin prepared by Cleaver-Brooks Co. The heaters have a capacity of 5 to 60 gal. and burn up to No. 5 fuel oil. **(F-21)**

A centralized lubrication system for oil or grease is described in a bulletin from Trabon Engineering Corp. The manifold system has two series of feeders, four kinds of pump drives—hand, motor, mechanical, and hydraulic—and reservoirs that vary from 3 lb. to 25 lb. **(F-22)**

Flexible metal hose and tubing is described in a bulletin put out by The American Brass Co. Some of the uses are carrying steam, oil, liquids, or gases under pressure, absorbing vibrations, and connecting parts that are not aligned. **(F-23)**

Metallizing is the subject of a bulletin put out by Metallizing Engineering Co., Inc. One illustration says that spindles with metallized surfaces run with 30% less friction. **(F-24)**

Centrifugal pumps with capacities to 500 gal. per min. and a 135-ft. head are described in a bulletin from Allis-Chalmers Mfg. Co. The frame pumps are built for V-belt drives, and can be connected to any type of prime mover. Performance curves are given. **(F-25)**

A slimline fluorescent fixture for industrial installations is described in a bulletin prepared by Smithcraft Lighting Division. The fixture features 20% uplighting, 30° crosswise shielding, and over 90% efficiency. **(F-26)**

A motor-circuit safety switch that is designed for space saving is featured in a bulletin from Cutler-Hammer, Inc. The switch is for a.c. circuits, and totally enclosed, nonwelded, sintered-silver, butt-type double-break contacts. **(F-27)**

Adjustable-voltage speed control is the subject of a bulletin from Century Electric Co. The selective speed drive units can be engineered to particular application with jogging, threading, jog reverse, reverse, low-speed starting, and dynamic braking. **(F-28)**

A portable incinerator that can be moved by several men and a truck is described in a bulletin from Plibrico Jointless Firebrick Co. The incinerator comes in four sizes ranging from 135 to 450 lb. per hr. **(F-29)**

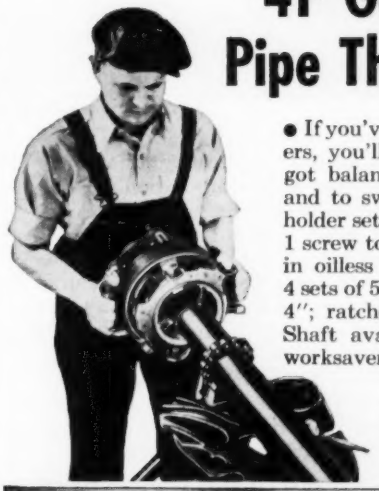
Standard belt-conveyor units that can be supplied from the stock are described in a bulletin from Conveyor Specialty Co., Inc. The units can be assembled into horizontal conveyors or vertical conveyors with down or up curves. **(F-30)**

Herringbone gear drives are described in a bulletin from Link-Belt Co. Thirty-nine drives in 534 standard ratios from 2.84:1 to 326:1, capacities from 0.4 to 2480 hp., and output speeds from 2.2 to 623 rpm. are listed. **(F-31)**

(Continued next page)

Never before one so easy to carry—
easy to put on pipe...

RIDGID
4P Geared
Pipe Threader



● If you've rassled with old-style geared threaders, you'll go strong on this RIDGID 4P. It's got balanced loop handles—a cinch to carry and to swing onto pipe. Mistake-proof workholder sets to size before it's put on pipe—only 1 screw to tighten. Easy upkeep—drive pinion in oilless bronze bearing; safe enclosed gear. 4 sets of 5 high-speed steel dies, 2½", 3", 3½", 4"; ratchet handle. RIDGID Universal Drive Shaft available — also 4P for conduit. Buy worksaver 4P at your Supply House.

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Work-Saver Pipe Tools

For more information, write direct or use Reader Service post card.

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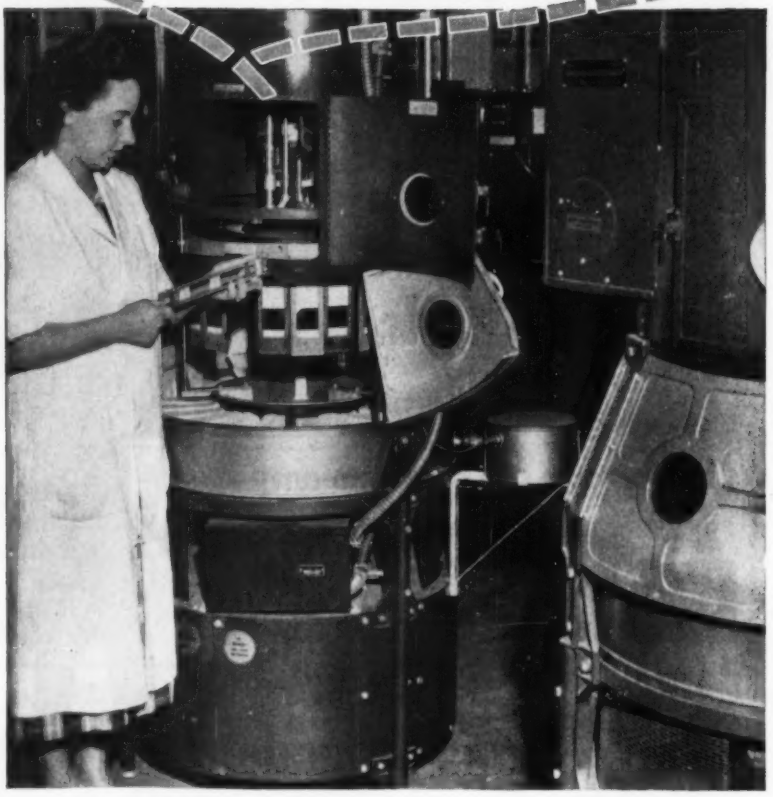
. . . helping to maintain famous Bur-Mil quality



Atlas Fade-Ometers and Launder-Ometers are in constant use in the modern laboratories of the Burlington Mills Corporation, serving two important functions—quality control and progressive research.

To assure unvarying quality in daily production, fabric samples from each phase of processing are subjected to exhaustive tests in Fade-Ometers and Launder-Ometers. These tests help to determine color fastness, bleeding, shrinking, and resistance to washing and mechanical action. Samples that fall short of the high Bur-Mil standard result in rejection of the entire lot.

Bur-Mil designers, also, use these Atlas-Ometers when experimenting with new fabrics. Because the Fade-Ometer so accurately duplicates the deteriorating effects of sunlight, and the Launder-Ometer the effects of commercial laundering, designers can ascertain in the laboratory whether fabrics will withstand actual use satisfactorily.

The machines are adaptable to a wide range of products. They are simple to operate, and may safely be left in continuous, unattended operation.

ATLAS ELECTRIC DEVICES COMPANY
361 West Superior St., Chicago 10, Ill.
WEATHER-OMETERS • FADE-OMETERS • LAUNDER-OMETERS

Reader Service (Continued)

SUPPLIES & CHEMICALS

Self-locking nuts and steel shaft collars are described in two bulletins prepared by Standard Pressed Steel Co. The nuts are used on looms, twisters, shuttles, circular knitting machines, etc.; and the collars are used on winders, twisters, looms, etc. **(F-32)**

Taping machines and dispensers are described in a bulletin put out by Minnesota Mining and Mfg. Co. The uses of 49 types of dispensers are described with the type of tape for each. **(F-33)**

Rubber-covered rolls are described in a bulletin from Tyer Rubber Co. The bulletin discusses the advantages of various types of rubber compounds and includes a list of information necessary to order the rolls. **(F-34)**

Wood-sole shoes for use in dyeing and finishing plants are described in a bulletin from F. J. Stahmer Shoe Co. The shoes come in various models and price ranges and are dustproof, acidproof, and waterproof. **(F-35)**

Algosol Olive IT, a water-soluble leucoester, is described in a bulletin from General Dyestuff Corp. The principal use of this powder is as a dulling component for dyeing and printing. **(F-36)**

Monochrome Olive FBBL Conc. CF, a straight chrome dye, is described in a bulletin from General Dyestuff Corp. Application to wool is discussed, and a sample of dyed wool flannel is attached. **(F-37)**

"Controlled Vat Dyeing" is the title of a booklet made available by American Cyanamid Co. The booklet is in three parts, stabilization at elevated temperatures, measurement, and leuco potentials. **(F-38)**

A fractional-horsepower V-belt catalog has been prepared by Raybestos-Manhattan, Inc. Belts are listed by a new numbering system and machines are listed by trade name for easy selection. **(F-39)**

Warper beams and beam heads are described in a bulletin from U S Bobbin & Shuttle Co. The features of the beams are said to be improvements in the internal supports, barrel staves, beam heads, protective tires, and outside reinforcing plates; and each of these elements is discussed. **(F-40)**

A protective coating against rust and corrosion called Liquid Stainless Steel is described in a bulletin from Slip-On, Inc. The coating is said to prevent rust on wet-processing textile equipment. Dipping dye buckets in the liquid is said to extend bucket life. **(F-41)**

Powdered cotton size, Houghto-Size 475, is described in a bulletin from E. F. Houghton & Co. The bulletin gives directions for use, advantages said to be mill proved, and shipping and storage information. **(F-42)**

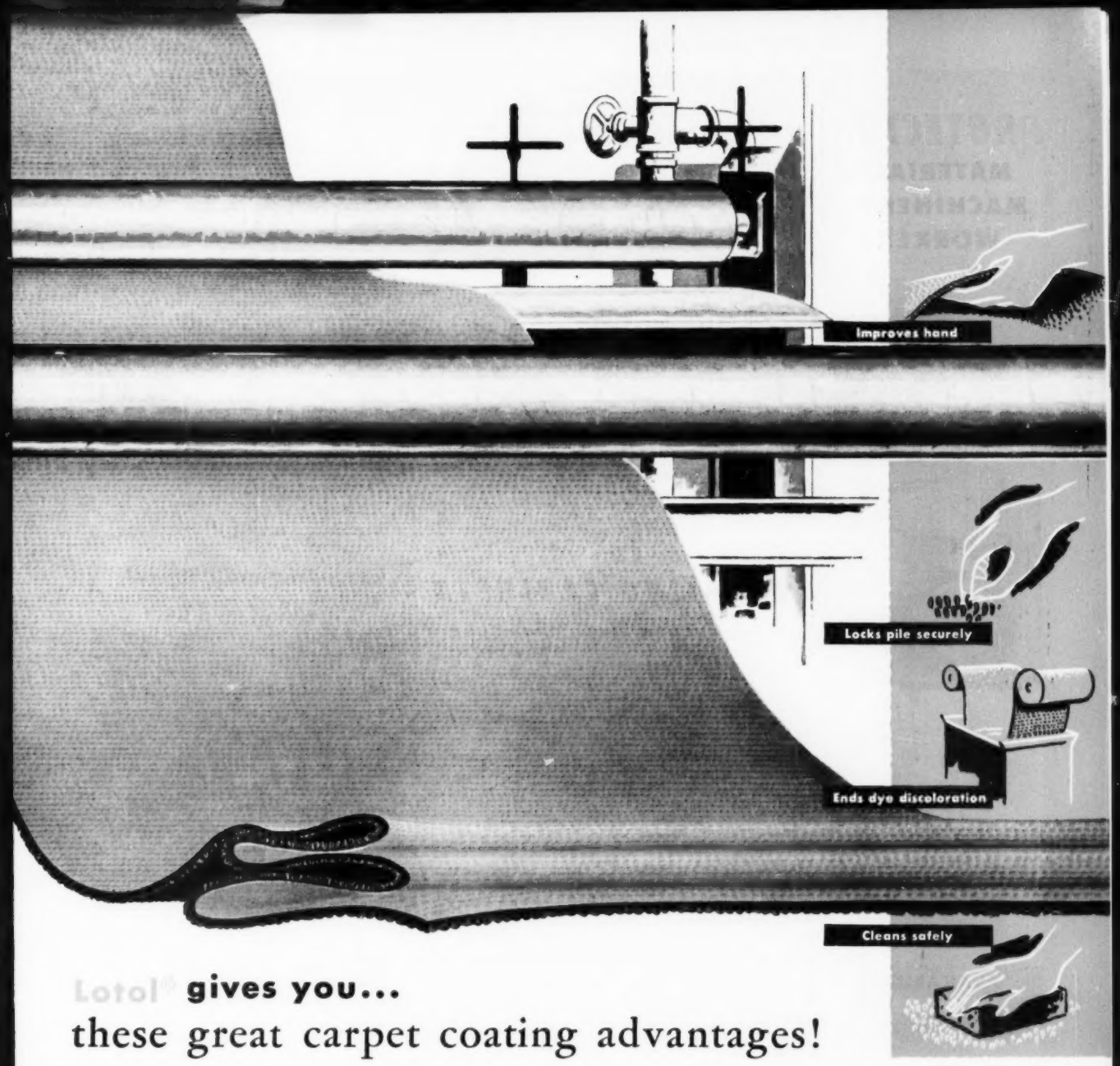
"The Sorbitol Story" is the title of a booklet prepared by Atlas Powder Co. The composition and properties of sorbitol products are given. The chemical is said to be free of fluctuating supply problems. **(F-43)**

White paint for mill walls and ceilings is described in a bulletin from The Arco Co. The bulletin emphasizes the better lighting that results from white interiors. The paint is said to cover a black wall in one coat. **(F-44)**

A stapling machine for closing corrugated and fiber boxes is described in a bulletin put out by International Staple & Machine Co. The operation of the stapler is explained in a picture sequence that shows that the staples do not penetrate into the carton. **(F-45)**

GENERAL

The bulletin of the Lowell Textile Institute for 1953-54 has been made available by that institution. The bulletin



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these great carpet coating advantages!

1. Finer hand and body! Naugatuck's Lotol—a specially developed latex compound—gives carpets greater weight and body, improved resilience, and **lasting** flexibility.

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4. Excellent cleanability! Lotol-backed carpets can be cleaned time and time again without danger of shrinking, odor, or other harmful effects.

Lotol compounds—proven in paints, textile and leather treatment, paper impregnation, and dozens of other uses—are just one of many reasons why Naugatuck is your finest source of latices, for bonding, coating, dipping, or any latex need.

Find out more about Lotol and how it can help you produce a finer carpet, more economically. Write to address below.

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JOHNSON
AUTOMATIC
temperature and humidity
CONTROL
in
ASPIRATING CABINETS

For use in spinning rooms, weaving rooms and other processing areas where precise regulation of temperature and humidity is required.

Johnson Aspirating Cabinets are equipped with a variety of Johnson Thermostats and Humidostats, together with the cumulators, relays, switches and blowers necessary to provide accurate control of temperature and humidity. These cabinets insure positive circulation of the sampled air over the controllers, while protecting the measuring elements and operating mechanisms from dust, lint and tampering.

Any desired combination of these features may be included in Johnson Aspirating Cabinets:

THERMOSTAT (Proportional Action) to operate Johnson Valves on heat sources with modulating action.

HUMIDOSTAT (Proportional Action) to control Johnson Valves on humidifying apparatus.

DOUBLE INLET BLOWER to insure accurate measurement of temperature and humidity in the treated space. Cabinet protects instruments against lint, dirt, vandalism and other influences which might affect the accuracy of control.

ELECTRIC SWITCH ASSEMBLY to provide a convenient connection for the blower motor.

TIMING PULSATOR to prevent over-humidification. Establishes "off" periods during which the Humidostat cannot demand humidifying effect.

ADJUSTABLE CUMULATOR in connection with the Humidostat and Timing Pulsator. Permits ready readjustment of the action of the Humidostat.

AIR FILTER (Dry screen or spun glass) to remove particles from the air which might adversely affect the action of the controlling instruments.

AVAILABLE
JOHNSON
ACCESSORIES

- Week-end Control Selection
- Recorder Stations
- Recorder-Controllers
- Humidifiers
  - Evaporating Pans
  - Spray Systems
  - Atomizing Systems
  - Perforated Pipes
- Bull's Eye Indicators
- Humidity Alarms
- Switch-over Stations

For more complete details about Johnson's Aspirating Cabinets, send for Bulletin H-400. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branches in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885

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contains information of general interest and the academic requirements and programs leading to a Bachelor of Science degree in the various textile specialties. **(F-46)**

Eight safety posters concerned with the safety of industrial truck operators and operations have been made available by The Baker-Raulang Co. The cartoon-style posters are printed in color on 14x22-in. sheets for use on bulletin boards and walls. **(F-47)**

Incentive trends for production and maintenance employees is the subject of a talk given by John W. Roberts at the National Society for Advancement of Management meeting and made available by Albert Raymond and Associates, Inc. The history and outlook for incentive systems are covered. **(F-48)**

Cotton-fiber testing available from United States Testing Co., Inc. is described in a booklet prepared by that company. Each test is described in the booklet, and a price list for tests of single and lot samples is included. **(F-49)**

Chromspun is the subject of a pamphlet made available by Eastman Chemical Products, Inc. The pamphlet is directed at the consumer and contains a description of Chromspun qualities and the qualities of end articles made from Chromspun. **(F-50)**

Radio-Frequency Heaters

(*Continued from page 104*)

components readily available from the radio industry.

If a manufacturer is using an early-model dielectric heater housed in a nonmetallic cabinet, he may either replace the equipment with a more-recent design or build a radiation-tight metallic cubicle or screened room. If radiation from the cubicle still exists with a metallic cubicle, there are three possible causes (and their correction):

1. If the heater has access doors or panels that do not make good electrical contact to the cabinet itself, copper weather stripping or copper banding strips improve the contact.

2. If the heater cubicle has a window or opening that is not covered with screening, copper mesh over the window or opening will provide adequate shielding.

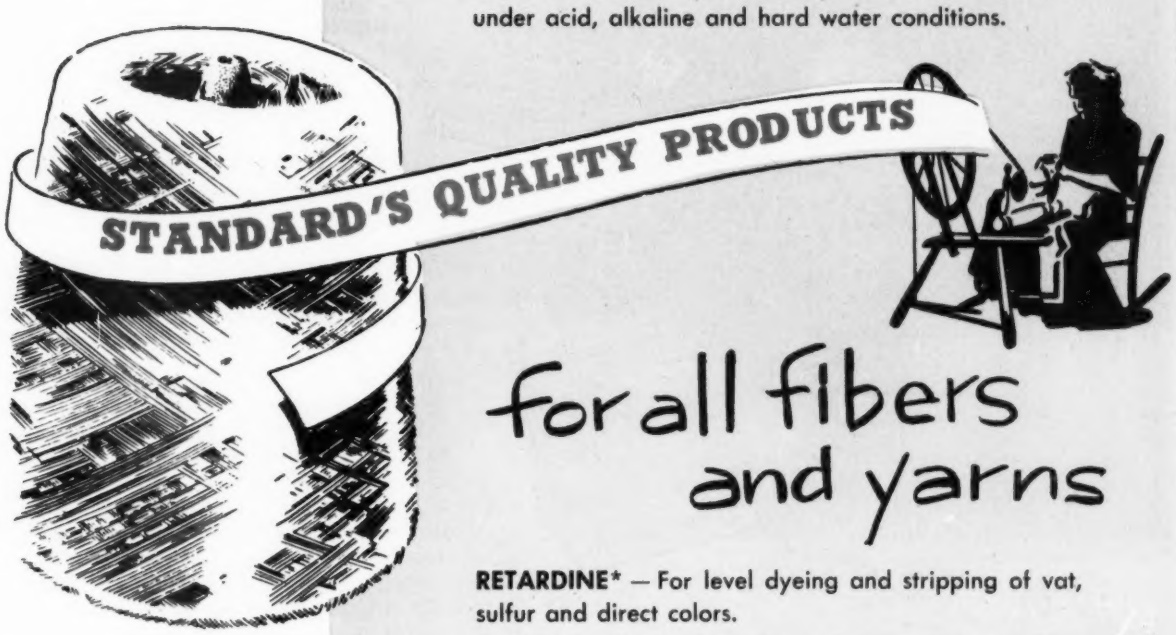
3. In some cases the cabinets have inadequate bonding between the sections. To correct this condition, paint, rust, and other foreign matter should be removed from the contacting areas and butting surfaces and the sections reassembled with good electrical contact.

Enclose Heater Units

Fortunately, most applications can be certified with only the heating elements enclosed. If material is handled on a batch basis, the heating zone can be enclosed during the heating cycle. A typical method is a conveyorized twist-setting heater with wave-trap tunnels at each end to reduce radiation at the entrance and exit ends. The material passes through the heating zone without the equipment radiating

STANTEX* OILS FOR YARNS AND STAPLE — Suitable for all fibers in coning, winding, twisting, spinning, weaving, knitting, etc. Characterized by high lubricity, excellent stability and scourability and good anti-static properties.

PYROTEX — For scouring and dyeing Wool, Worsted, Cotton, Acetate, Rayon and Nylon. Neutral, effective under acid, alkaline and hard water conditions.



for all fibers and yarns

RETARDINE* — For level dyeing and stripping of vat, sulfur and direct colors.

STANTEX* PENETRATORS — For fast, efficient wetting and surface reducing action in dyeing and finishing.

STANDAPOLS* — Quality sulfonated oils for finishing, softening, throwing, sizing and emulsifying; anti-static agents.

STANTEOSINE — Substantive softener for natural and synthetic fibers.

STANDAFINS* — Durable and semi-durable finishes imparting a full range of body, hand and drape to all fabrics; non-slip finishes; snag-resistant finish for hosiery.

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a signal strong enough to exceed the specified limits.

Another example is a cage arrangement that encloses the heating zone during the heating cycle but that can be opened readily for loading and unloading. Oven and cage interlocks protect the operators from heating elements of high potential.

Suppressing radiation from the coils or electrodes at a remote work station is difficult. In some cases the size or shape of the parts makes it impossible to shield the installation and still maintain good material flow. A shielded room or metal cage around the heater, work position, materials-handling equipment, and operator may be the only solution.

Cooperation between the manufacturer and user of electronic heating equipment simplifies the certification of heating installations. Most manufacturers will be glad to review the user's radiation problem and submit their recommendations.

Processing Nylon Blends

(*Continued from page* 131)

be wound into a ball on a punch. A pressure weight and lever are used to compress the ball during winding.

The pressure and tension on the balls must be lowered considerably for nylon, since this fiber has a troublesome tendency to contract and to cling. Fibers sticking together, or licking, may make it necessary to run packing paper between the layers of the ball on the punch, a cumbersome and time-consuming practice. Static eliminators and a minimum of tension are helpful at this point.

Heat is applied to the comb by means of steam chests. The heat must be sufficient to soften the oil in the sliver and limber up the leathers in the comb.

Once the machine is started, the heat must be reduced for combing nylon staple because nylon is quite thermoplastic. Also, since nylon does not absorb moisture and cannot be oiled as heavily as wool, the static problem must be considered. Temperatures of at least 75° F. with above 70% r.h. have been found helpful.

Careful experimentation must be used to determine the exact temperature suitable for each blend. Even the type of staple will make a difference; for instance, it has been found that a slightly higher temperature is needed for dull nylon than for bright nylon staple.

Finishing the Combed Top

Unless especially careful blending is needed, the first finisher gill box

HOW YOU CAN GET *LONGER WEAR* from your *V-BELTS*

Service and efficiency of your V-Belt drives depend on how your drives are planned, and on the V-Belt you select for the drive. Consideration of the basic factors involved will help you to select the specific V-Belt that will maintain lowest production and maintenance cost for your operation.

Data Tables Eliminate Guesswork

From tests in our laboratory and field observations of every type of application, we have determined and tabulated V-Belt data for your use in planning and selecting your drive. These tables provide corrected horsepower figures, service factors, arc-of-contact correction factors, driven speeds and other elements to be considered.

Selection of Belts and Sheaves

Belt failures and maintenance costs are reduced by following recommended sheave diameters to provide proper seating of the V-Belts in the grooves. The D-A Manual will help to determine the proper belt dimension for your sheaves.

Prevent Overloads and Belt Slippage

Selection of the number, size, and type of V-Belt according to designated horsepower capacity prevents overloading and production losses. Reduction of the number of belts or sheave diameters below those recommended invites future trouble and increased maintenance costs. The D-A Manual is a reliable guide to follow. Durkee-Atwood V-Belts will last longer on your drives.

D-A Service Includes Engineering Help

Durkee-Atwood Company maintains a complete engineering and research department. If you have a V-Belt or V-Belt drive problem, our facilities and services are available to you upon request.

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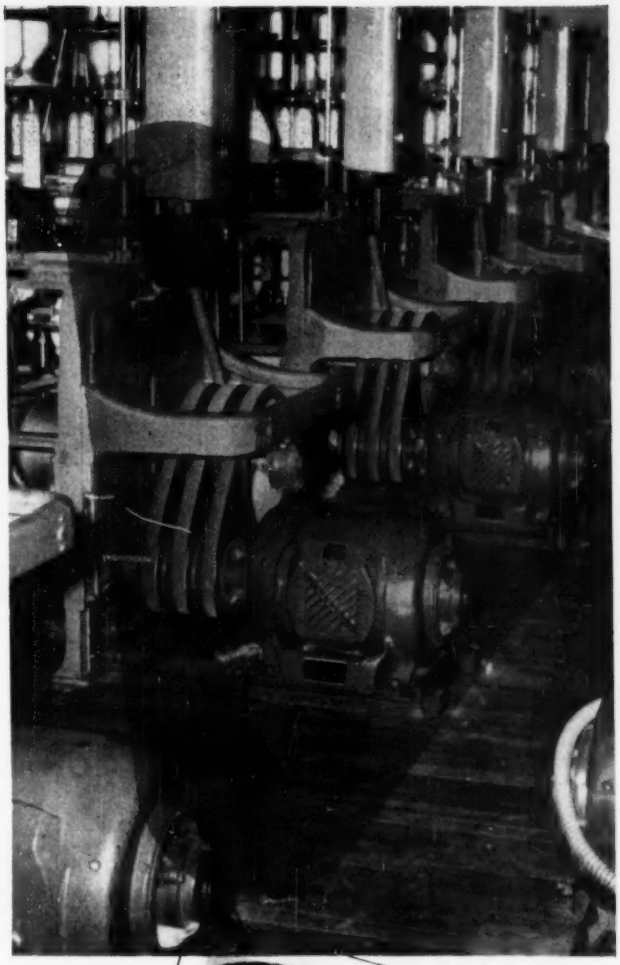

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For Textile Mill Maintenance

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Form No. 556

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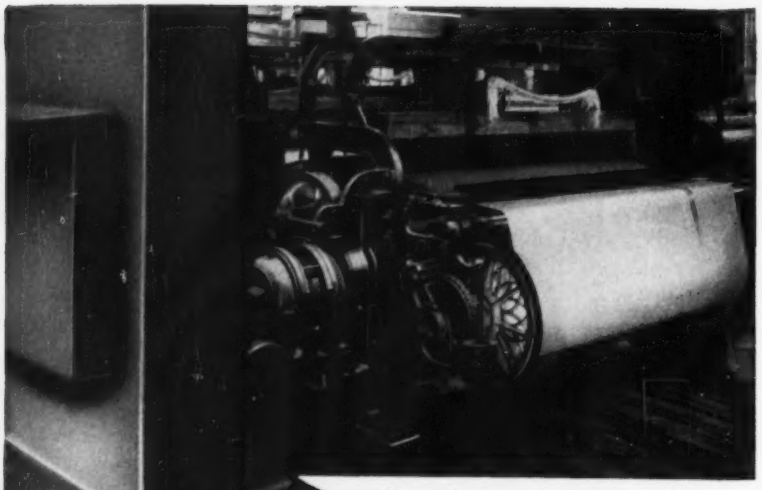

C&K woolen loom mounted on UNISORB . . . without bolts or lag screws, without floor damage.

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REDUCES INSTALLATION COSTS

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is a good point at which to mix the combed nylon sliver with the combed wool. For example, if 24 comb slivers are used, each nylon sliver substituted for a wool sliver will add 4.17% nylon to the blend.

Water is usually applied at this finisher, an oil and water emulsion being preferred in the case of nylon blend.

The second gill box is equipped with a balling head that winds the top in its commercial form of about 5-lb. balls. In winding the top, pressure may again have to be reduced when much nylon is contained in the blend.

It is important that the top be stored in a cool, moist atmosphere for about one week before further processing. This period gives the moisture a chance to penetrate the wool; it will also help the nylon to regain its shape so that less trouble with static and creep will be experienced in subsequent handling.

Roving and Spinning

The twist in the roving must be kept as low as possible. There is also a tendency to keep the twist low in the spinning of the yarn. The strength and length of the nylon staple will give yarn, even with low twist, that will show good results in breaking tests.

However, breaking tests and subsequent abrasion tests will be necessary to predict the behavior of the yarn in weaving or knitting operations. Yarn with too low a number of twist turns may look good and have a nice bulk with lofty appearance. Desirable as this is, the yarn may be abraded and may thus cause trouble due to pilling in weaving and knitting.

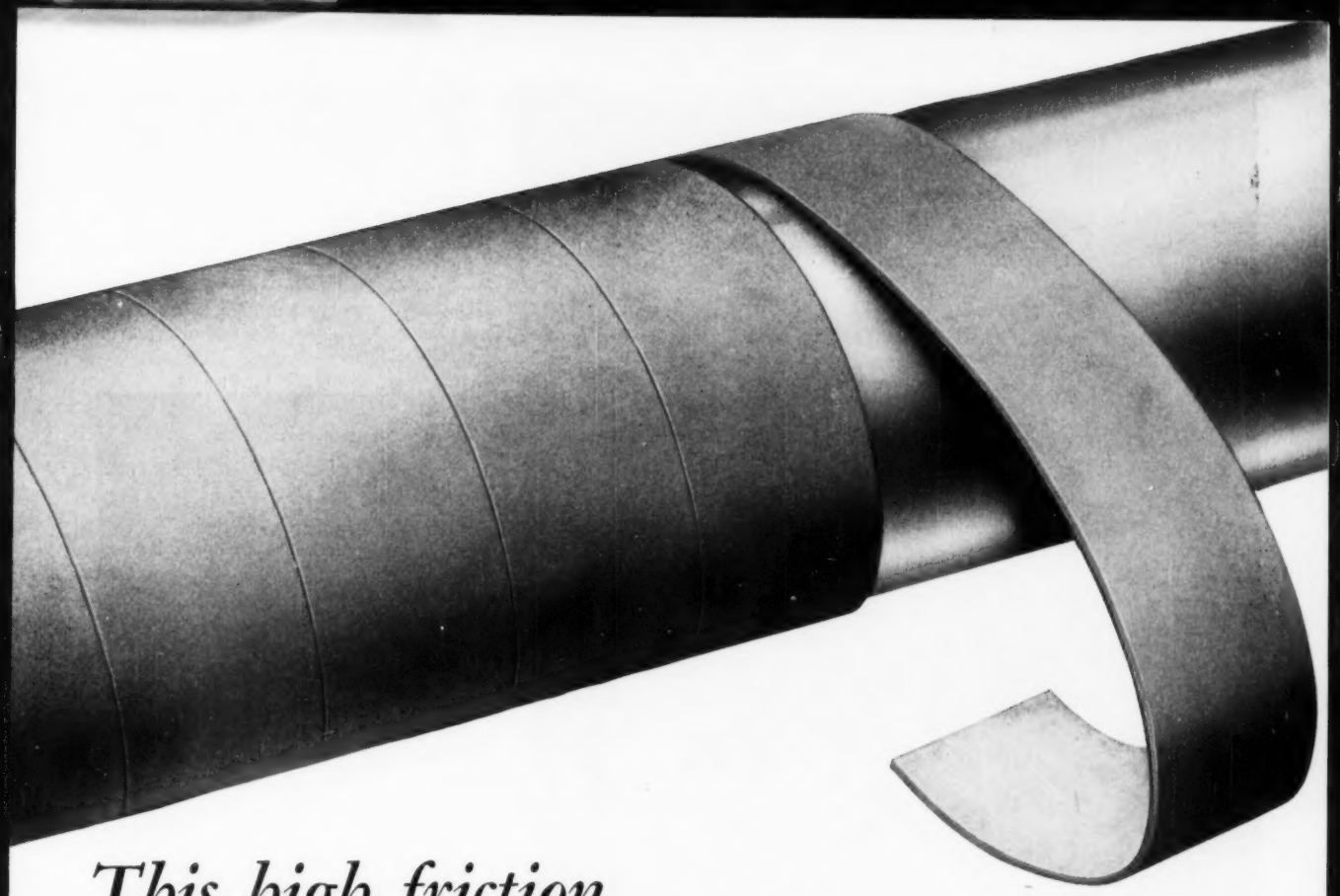
This trouble can be minimized to a certain extent by proper sizing. But no hard and fast rules can be given, since the problem depends upon the type of goods to be manufactured.

As soon as possible after spinning, the yarn should be removed from the spinning packages. Even with a minimum of pressure on the draft rolls and with the lightest spinning travelers that will run well, the yarn is wound rather tightly on the spinning bobbins. And tight winding is always injurious when nylon is involved; the yarn tends to pull together and become thin.

Twisting and Winding

If ply yarn is to be produced, the spinning packages can be used on the twister if it is possible to use them right away. If delay is unavoidable, it is better to wind the yarn immediately after spinning, with light tensions being used on the spooler, coner, or winder.

In winding filling, the tendency



This high friction loom take-up roll cover is **S-M-O-O-T-H!**

It's so smooth it won't mark the new loom-finished fabrics or any other of the most delicate fabrics. Yet Armstrong's NO-732 Take-up Roll Cover develops up to twice the grip you usually get with rubber.

A special synthetic rubber compound gives NO-732 its unusual combination of even take-up tension and non-marking smoothness. In addition, the synthetic's toughness assures you of long, economical service.

You can make a quick test of NO-732 right in your own office. Feel its smoothness. Rub it against any surface—your desk, your shirt, the cloth you weave—and see how little pressure you need to make NO-732 grip firmly.

Send for a sample and make this simple test yourself. Then give NO-732 a real performance test on one of your looms. Just call your Armstrong man or write Armstrong Cork Company, Textile Products Department, 6706 Dauphin St., Lancaster, Pa.

ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

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ARMSTRONG'S TAKE-UP ROLL COVERS

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Little inch or big one, any job's a lead pipe cinch with Towmotor speeding materials handling up to double and more for you . . . and the boss. Results like that are no pipe dream, thanks to TowmoTorque, the new automatic transmission that helps you crowd extra hours into every working day. And Power Steering that's easy no matter how long your operators drive. Or the new Cushioned Power Diesels that handle like sissies and perform like the frugal brutes they are. Plus many other Towmotor features that help you get so much more done . . . so much more easily. Send today for booklet describing TowmoTorque and Power Steering. TOWMOTOR CORPORATION, Div. 2206, 1226 E. 152nd Street, Cleveland 10, Ohio.

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of nylon to contract must also be considered. The yarn may be wound rather loosely on the filling bobbins. The bobbins are then allowed to stand for some time to allow the nylon to contract, tighten the packages, and reduce any danger of the filling sloughing off during weaving.

The fact that the yarn has had a chance to recover will also lessen the tendency to contract after insertion into the cloth.

STA Discussion

(*Continued from page 143*)

and the maximum-minimum method:

"With the integrator, you get an accurate measure of the areas above and below the base line. The integrator takes into account both the height and the width of any variation you get. If you figure by the other method, however, you just take the highest and lowest points and average them. This maximum-minimum method gives average *maximum* variation, and the integrator gives average *percent* variation.

"Most people agree that the integrator is the more useful method. There is no real correlation between the two methods because the units of measure are different. As an approximation, however, 2% by the integrator is about the same as 10% by the maximum method."

Less Bulk in Drawing

"Very promising" results were reported by a mill that lightened up its card sliver a little and lowered the draft on its five-roll controlled-draft drawing. Production is the same, but less bulk and lower draft are giving better work.

Lumps Under Long-Draft Aprons

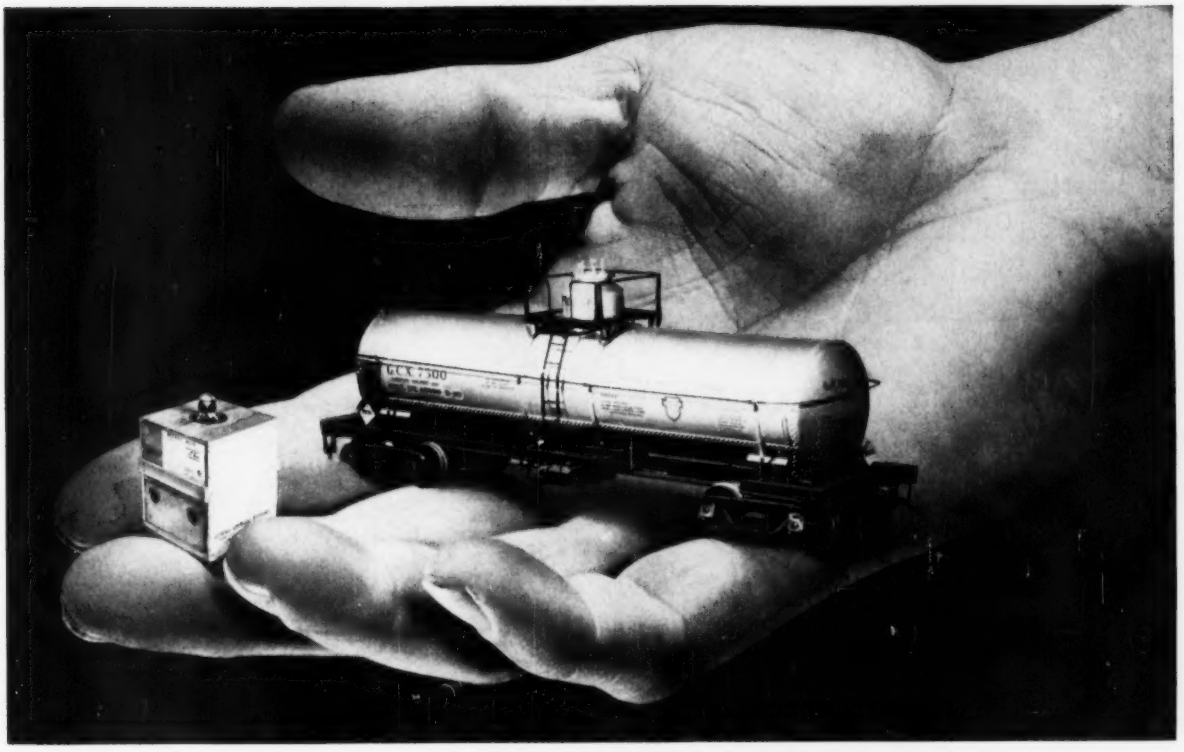
The space between the cradle and the side of the apron in long-draft systems appears to be a key factor in the problem of lumps under the apron. One mill that had $\frac{3}{32}$-in. clearance with some aprons reduced the space to $\frac{1}{32}$ in. and got fewer lumps under the apron.

The apron material also has a bearing on lump formation, according to the same mill. Another mill decided that the coefficient of friction of the apron material, the type of middle roll (knurled or fluted), and the weight on the rolls all contributed to the lump problem. Now, with different cradles, new aprons, and a different weight, the mill is doing a much better job.

Speeds for Spoolers

One mill, with Barber-Colman spoolers, is running 40s at 1,200 yd.

use acids?



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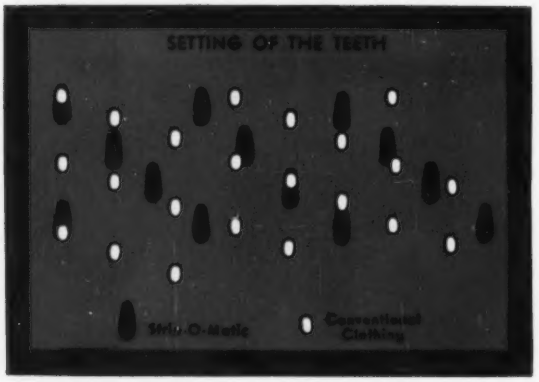
STRIP-O-MATIC Card Clothing



ANOTHER REASON FOR

STRIP-O-MATIC*

SUPERIORITY

Note the setting of the teeth on *STRIP-O-MATIC* as compared to conventional card clothing. Fewer teeth longitudinally, permit open spacing—result in less trapping of stock yet *STRIP-O-MATIC* has just as many points *transversely*, which are the points that count the most. In addition to *STRIP-O-MATIC* we manufacture a line of highest quality conventional card clothing for every textile fiber. Call on us for help with any carding problem. No obligation of course.

Sincerely,

E. Allen Snape Jr

President

MANUFACTURERS OF QUALITY CARD CLOTHING FOR OVER 60 YEARS

*Patented®

BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA. Booth

per min. and 28s at 1,000 yd. per min. A combination wind is being used, and reties are less than 25.

Another mill is running 10s, 16s, 20s, and 30s at 1,235 yd. per min. Reties are at 5%.

Slashing Wet Warps

The only way to eliminate the variation that wet warps cause in slashing is to dry the warps, according to one mill. Moisture left in the warp dilutes the size; so a predrying cylinder is used. Before predrying was put in, the size box would overflow from the water added to it by the wet yarn. Yarn number does affect the necessity for predrying; so each mill has to make the decision on its own conditions.

Slasher Creeling and Squeeze Rolls

Two creels for each slasher are saving an hour and a half to two hours of the slasher man's time at one mill. When a set runs out, the new set is ready to roll in, and there is little lost slasher production.

Both wool blankets and yarn have been used on rubber rolls at mills that could not make the rubber rolls work by themselves. Blanket life is said to be better at one mill because of the rubber foundation.

Yarn-wound rolls are being used on an air-drying slasher at one mill because of cost and better dressing of the warp. Wool blankets were used before at this mill.

The rolls are wound first with jute, then with two ends of 7½s cotton and one end of wool. The front roll is rewound every 24 hr., then put on the back so that there is always a seasoned roll at the front.

An air-drying slasher at one mill is running at 90 yd. per min. with a blanket-covered roll, but another mill ran into trouble at 55 yd. per min., when the blanket drew up in the roll flange.

Metallized Take-Up Rolls

Alloys and stainless steel are being used for metallizing in one mill, and excellent results are being obtained. The covering, which costs about $3 for a 43-in. roll, lasts longer than anything the mill has ever had on take-up rolls. To get a uniform surface on the rolls after metallizing, the rolls get four passes on a lathe.

Controlling Kinky Filling

Conditioning is one way to control kinky filling, but one mill can't condition because streaky dyeing is the consequence. Another mill finds no kinky filling at two ends per dent but gets trouble at three. Shortening the pick

Make the right move!

Use Louis Allis Textile Motors and Adjustable Speed Drives

SELECT-A-SPEDE
An adjustable-speed drive for operation on A-C power. New magnetic amplifier, adjustable voltage control. 5 to 150 HP, single motor or multi-motor range drives.
LOOM MOTORS
Built especially for loom service. For new, old, and 3-point mountings. ½ to 2 HP.
SELF-CLEANING MOTORS
Pioneered and developed by The Louis Allis Co. for textile applications. Special torques for card drives — soft starts for spinning frames — or any other special application.
AJUSTO-SPEDE
An Alternating Current adjustable speed drive using the versatile Eddy Current Clutch. ¾ to 75 HP. Also available in multi-unit range drives.
GENERAL PURPOSE
General-purpose motors include splash-proof as shown. Available with dye-house insulation, excellent for pump application in finishing and bleach plants.

Louis Allis has a special purpose motor or multi-motor range drive for any power requirement in the textile industry.

Louis Allis motors and multi-motored range drives are busy turning the wheels of the textile industry — on cards, pickers, warpers, tenters, spoolers, slashers, batchers, padders — and all the other complex machinery that produces America's fabric.

Let Louis Allis help you to select the proper motors or drives for greater production and more efficient operation. Consult your nearest Louis Allis District Office or write us.

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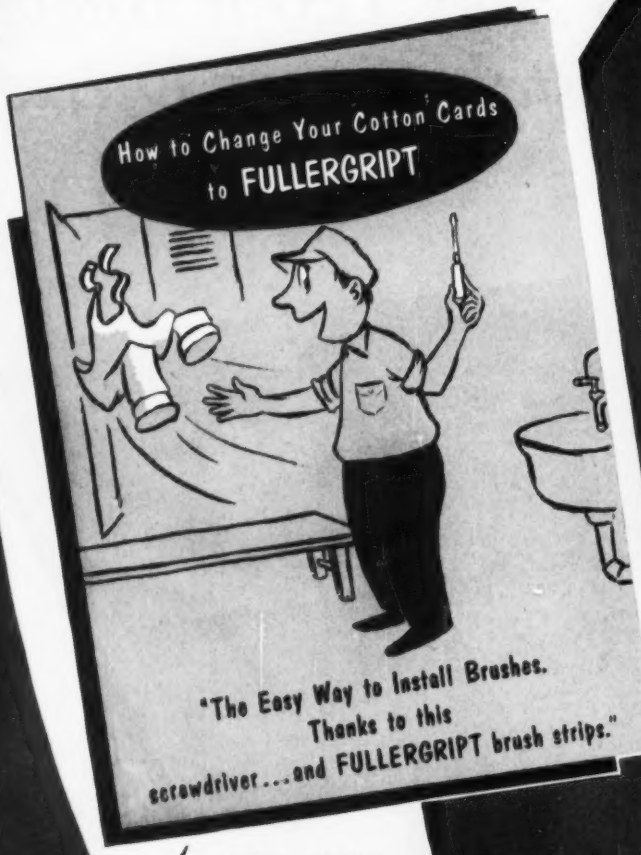
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and allowing easier picking is said to be a less desirable solution.

Red Tags for Cloth Room

Inspectors at one mill send a red tag back to a loom making seconds. If the same defect is found in the next roll, two more red tags are sent back to the loom.

Another mill has solved the problem of getting the weave room and the cloth room to use the same language by making up sample notebooks for the inspectors. The weave room people now know just what the inspector means, because both rooms use the same terms to describe defects.

Maintenance Program

(*Continued from page* 132)

Proper Equipment Can Double Each Employee's Production

The tools and equipment needed depend on the amount and kind of work to be done, but good equipment —not castoff production machinery— is essential for servicing, repairing, and installing today's complicated production tools.

A few of the tools mechanics must have to reduce the time and manpower requirements of maintenance work are power drills, saws, nut setters, drivers, and hammers.

Portable gas and electric welders, cutting outfits, power sweepers, lift trucks, tractors, bulldozers, dump trucks, scaffolding, and dozens of other items make one well-equipped mechanic of today as valuable as two men of a few years back. A mechanic is only as good as his tools; and to get good work he must have plenty of the proper tools.

The medium-size organization gets more for its tool dollar than large departments because specialized equipment is used a greater portion of the time and there is less need for equipment duplication.

Each mechanic should have a suitable workbench and other facilities. A mechanic's pride in working with good equipment at a well-designed work place helps to produce the kind of maintenance work that means dollars-and-cents savings for the company.

Much of the mechanic's equipment should be made easily portable so that it can be moved to a production job in a hurry. Mechanics' workbenches can be put on wheels, loaded with tools and supplies, and pushed to the job. Special trucks can be made for transporting ladders, scaffolding, lumber, and large tools.

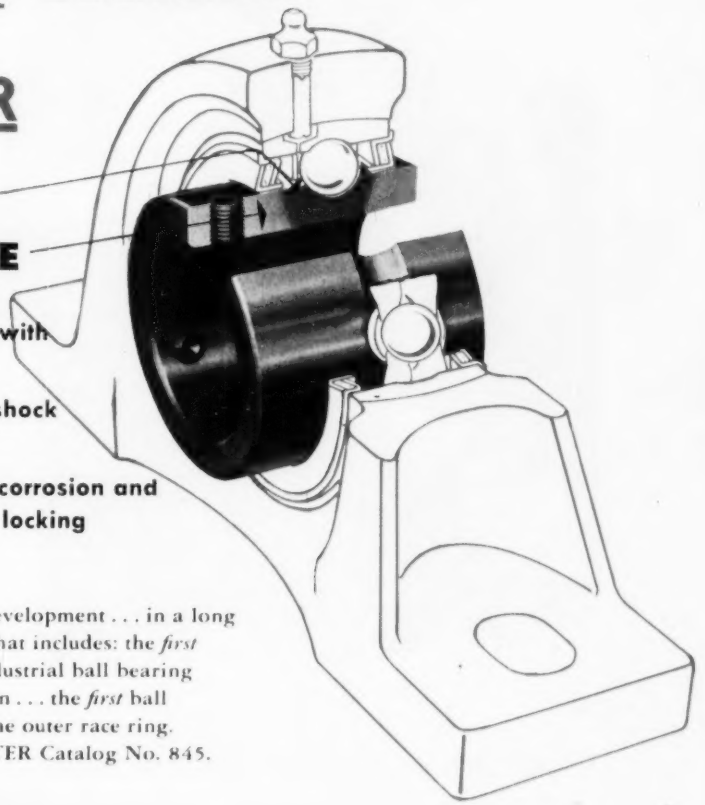
Routine jobs such as janitor work,

ZONE HARDENING*

for MAXIMUM LIFE EXPECTANCY in EVERY BEARING!

Only **SEALMASTER**

is **HARD HERE**
but **SOFT HERE**



- to permit race-to-shaft locking with increased holding power
- to insure greater resistance to shock and vibration
- to minimize danger of fretting corrosion and eliminate shaft wear by firmer locking of bearing to shaft

Zone Hardening is another major development . . . in a long history of SEALMASTER advances that includes: the *first* self-aligning, permanently sealed industrial ball bearing unit . . . the *first* outer race locking pin . . . the *first* ball retainer riding the inner surface of the outer race ring.

Write for your copy of SEALMASTER Catalog No. 845.

ZONE HARDENED
PERMANENTLY SEALED
SELF-ALIGNING • PRE-LUBRICATED
FLOATING BALL RETAINER

*ZONE HARDENING

is a completely automatic heat treating process by which the inner race ring of SEALMASTER Ball Bearing Units is hardened through ball path section *only*. (See cutaway view.) The extended part of the inner race is left in its original metallurgically soft, tough state. Hardened set screws are mounted through this soft portion, to provide firm race-to-shaft locking and the performance advantages mentioned above. ZONE HARDENING is patented—exclusively SEALMASTER'S!

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A Division of Stephens-Adamson Mfg. Company
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Season is Sweater Season with
LEIGHTON KNITTING MACHINES

For all year round sweater sales Leighton Circular machines can be a help to you. Keep pace with all the new trends in knitted outerwear fabrics whether fashioned from lamb's wool that is soft or the latest synthetic blends.

Leighton machines knit soft spun yarn with less end breakage and give you the luxury of quality knitwear in a wide range of fabrics.

Twin sweater sets make every season a sweater season and increase your sales.

Write now for information

Send sample of fabric for recommendations

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

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INCORPORATED—1896

206 For more information, write direct or use Reader Service post card.

window repairs, and lubrication service can be simplified by providing suitable wheeled equipment carts.

"Maintenance on wheels" for servicing areas away from the maintenance shop is a must for efficient utilization of maintenance tools and manpower.

Plan a Routine Schedule For Your Paper Work

Paper work is unbalanced in most plants. Some plants have too much, others too little. Everyone would like to do a better job with less red tape.

To control costs, judge performance, and plan efficiently, proper records are necessary. The job-order or work-order system in one of several variations will give any plant the required records for every situation.

One clerk can take care of all the paper work for nominal control on orders amounting to less than $10 and detailed control on jobs over $10.

In addition, the clerk can handle the office routine, handle incoming telephone calls, serve as a dispatcher, maintain the machine-data card file, post job labor and material expense on all jobs over $10 on the machine expense cards, record the preventive-maintenance records and inspection schedules, check the daily tallies for all maintenance employees, keep the work-order register, and prepare labor-load reports and monthly reports to management.

One clerk can do all this work by following a carefully planned, simple routine.

Use a Budget as a Guide To Planned Operations

The budget is an integral part of paper work and is valuable to the maintenance foreman because it can be used as a tool to improve efficiency and as a guide to planned operations.

The cold figures on the budget sheet are often the only report management gets on the maintenance operation. If a budget is well planned and executed, it will point out the efficient work done by the maintenance department.

Basically, the maintenance budget must supply sufficient funds to provide the desired level of maintenance service. Variation in workloads caused by increased or decreased production, large repair projects, etc. must be provided for so that maintenance can expand services and cut back logically when the situation demands.

Arbitrary handling of the maintenance budget is a sure road to waste, inferior service, and high costs.

Budgets, correctly handled, aid in cutting costs. One place the mainte-

this modern COMB again puts

LIVERMORE in the LIMELIGHT:

As shown: for W-3 loom 26 harness, 4 and 5 ball. Also available: for W-2, C-4 and high speed looms, 20 harness, 4 ball.

7 HFL IMPROVED TOOTH-FEATURES never before available in a ROLLING EVENER COMB

- Unbreakable.
- Spring Steel.
- Centerless ground to a fine, smooth finish . . . to reduce friction.
- Round.
- All exactly alike — uniform.
- Positions the vibrator lever so that the shoe is in line with chain roll.
- Accurately and evenly spaced in strong, cast aluminum frame.

CAST TEETH have none of these points!

* . . . and this plus feature:

self-locating POINTED SCREWS with hex heads CUT INSTALLATION TIME IN HALF!

No more fumbling around, in an awkward position, to set your screws. These are self-locating, practically self-starting!

Send for descriptive literature

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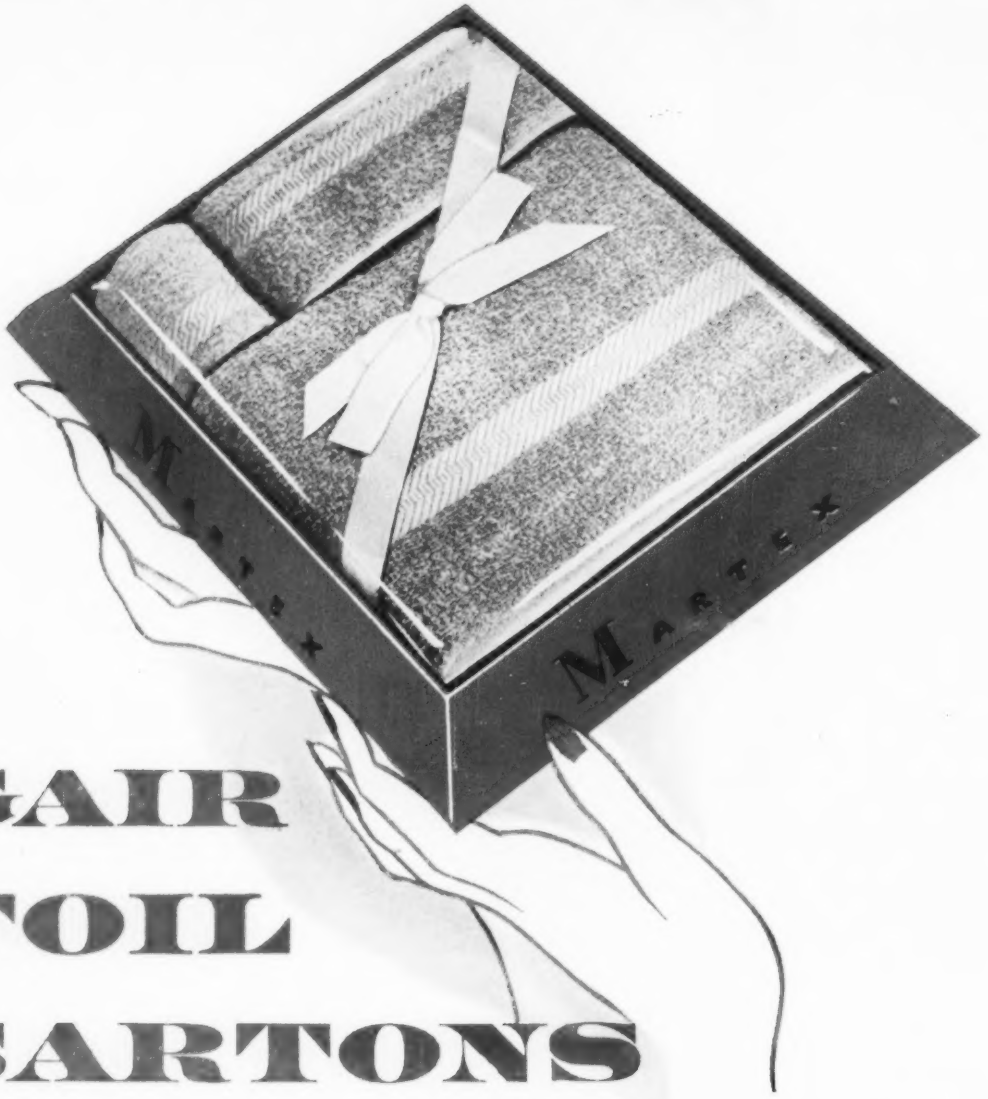
IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.



GAIR FOIL CARTONS

create a style trend in smart Packaging!

Think of your product as a jewel, give it an appropriate setting by Gair, to catch the eye and captivate Consumers in this Age of Self-Service . . . perhaps a glistening transparency of rigid plastic, lined with luxurious foil like the Martex carton shown above. Or some other imaginative creation now made possible by the skill and facilities of the Gair organization.

Challenge us to show you a package that will walk your product right off the dealers' shelves.

Write for Brochure on Gair Cartons

GAIR

PAPERBOARD
FOLDING CARTONS
SHIPPING CONTAINERS

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK • TORONTO

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nance department can often reduce costs is in handling supplies and tools. When the stock room is a long way from the maintenance shop, it's easy to waste a dollar in time and paper work getting an item worth only a few cents.

A stock room should be located in the maintenance shop to reduce waste in obtaining supplies. Items valued at less than $1 can be given out without formal requisitions so that the mechanics won't be delayed by getting authorizing signatures.

Major supply items and spare parts can be kept in the main-plant stock room or maintenance stock room, depending on the particular situation.

It's a good idea to have the department's tools in the stock room, too, to prevent loss and breakage and to make them available to all mechanics.

A full-time attendant can issue all supplies, dismantle and salvage parts to be used again, keep an inventory of supplies, and make purchase orders for needed supplies.

Make a Priority Schedule For Preventive Maintenance

Preventive maintenance offers all sizes of plant-maintenance departments real opportunities for worthwhile savings. In fact, preventive maintenance is growing so important that steady, economical production is dependent on how well it is applied.

Records of the excess cost of "wait-till-it-breaks-down" maintenance (the records include production downtime, reduced machine service life, and upset maintenance schedules) give a dollar-and-cents answer to the need for sound preventive-maintenance programs.

A good preventive-maintenance program must be a scheduled program with priority over all normal maintenance jobs. Eventually the reduction in emergency breakdowns will free more than enough men to handle preventive maintenance.

Preventive-maintenance inspections are more thorough when an itemized checklist is used. Checklists are especially effective when notations such as "OK," "bent," "loose," and "broken" are added.

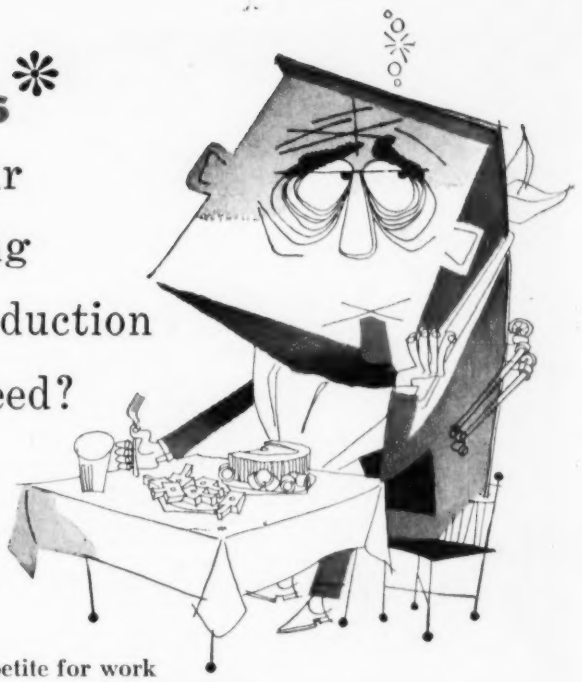
Since it isn't economical to have a full-time inspector, qualified mechanics can do the work as part of their regular jobs. Then the minor repairs can be made on the spot with considerable time savings.

Larger repair jobs can be scheduled at the convenience of the operating departments unless it is necessary that the work be done immediately. Records of the cost of repairs should be kept on each machine.

What and how often to inspect are

does

coil-itis* have your processing tank production off its feed?



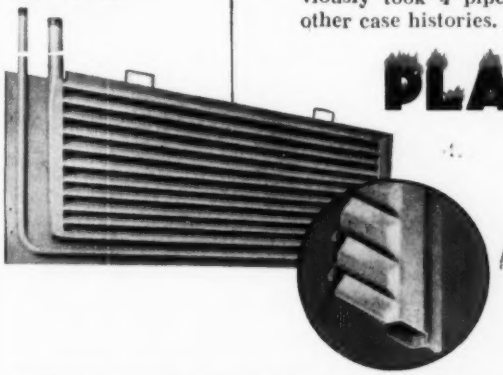
When the appetite for work of your heating and cooling processes diminishes, the trouble may well be coil-itis. For, downtime due to pipe failures and limitations can seriously delay your production flow. Switch to Platecoils, the new tonic for production, as revolutionary as the new wonder drugs. Platecoils take 50% less tank space leaving more room for greater payload. They heat or cool 50% faster. They simplify maintenance and save hours of downtime. Equally important, Platecoils cost as much as 50% less in the first place. Platecoils cure production troubles involving heat transfer and give production a shot in the arm.

Write for Bulletin P32 today!

PLATECOILS SAVE 50% IN HEAT TRANSFER COSTS

PLATECOILS ELIMINATE A 6-TO-8 HOUR-A-DAY CHIPPING JOB

At Sealed Power Corp., installation of Platecoils has completely eliminated a 6-to-8 hour-a-day chipping job. Three Platecoils now heat a tank that previously took 4 pipe coils. Ask about other case histories.



PLATECOIL

REPLACES PIPE COILS

*Coil-itis — Diagnosed as tank heating and cooling problems. Platecoils — the prescription for solving pipe coil problems.

PLATECOIL DIVISION, KOLD-HOLD MANUFACTURING CO., LANSING 4, MICHIGAN

For more information, write direct or use Reader Service post card.

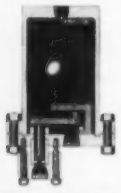
there's a RIGHT way to trap a Steam Line!

JUST SPECIFY Clark CONTROLS

Thanks to the proven dependability and completeness of the Clark steam trap and regulator lines, power engineers can meet most of their requirements simply by calling a Clark representative. For there's a "right" Clark steam trap for every purpose.

Clark makes the famous patented Duo-Step inverted bucket traps that handle *double* the usual amount of condensate. In addition, Clark manufactures open bucket and float type traps as well as pressure regulators and strainers.

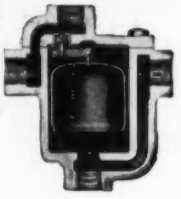
So call on Clark for *all* fluid control requirements. There are Clark representatives in most major cities.



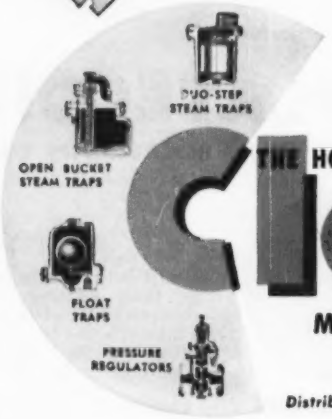
SERIES "450" FLOAT TRAP. For drainage where continuous flow is desired, or for maintaining liquid levels. Steel construction for pressures to 600 P.S.I. Compound linkage gives larger capacity. Size ½" to 2".

SERIES "80"-D (DUO-STEP) TRAPS. Cast semi-steel construction for pressures up to 250 P.S.I. and temperatures to 450°F. Equipped with Duo-Step Leverage and Venting, Clark-loy seats and discs. Pipe sizes from ½" to 2".

"Y" SELF-CLEANING STRAINERS. Remove dirt, scale and grit from steam, fluid and gas lines. Sizes ½" to 3" I.P.S.



SERIES "60" INVERTED BUCKET TRAP. Choice of horizontal or vertical inlet or outlet. For pressures up to 150 P.S.I. "Clark-loy" guided disc and seat.



THE HOME OF DUO-STEP LEVERAGE

Clark

MANUFACTURING COMPANY

1830 EAST 38th STREET

CLEVELAND 14, OHIO

Distributors and Representatives in all major cities

problems that can be answered by checking the cost of inspection versus the gain from trouble-free operation. For example, the cost of inspecting most types of fractional-horsepower motors far exceeds the present replacement cost.

Reports to Management Reflect Efficient Operations

Other functions often associated with maintenance are plant security, fire protection, and safety. Proper organization and planning pay off in better safety records.

For instance, the watchmen can be trained to note simple mechanical and electrical troubles, breaches of good safety practices, poor housekeeping and sanitary practices, etc. while making their rounds.

These data give the maintenance department an additional source of information on conditions in the shop and help speed corrective action.

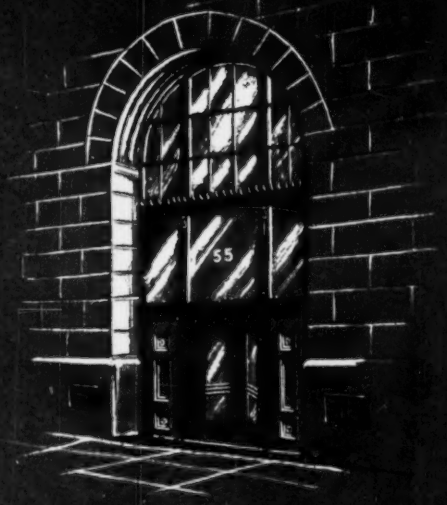
If the boiler house is associated with the maintenance department, economical steam production can be controlled by the newer instruments on today's market.

No maintenance department can be efficiently operated without parts lists, drawings, maintenance instructions, lubrication charts, etc. for each piece of machinery serviced. One person, usually the clerk or stock attendant, should be responsible for the data file; and if any papers are removed, he should see that they are replaced.

Finally, reports to management in simple form give the maintenance supervisor a chance to show the progress he is making. Monthly reports, with a special report at the end of the year, will usually keep management adequately informed on maintenance work. The reports should show where the maintenance manhours were spent, the amount of overtime, utility consumption, jobs completed, estimate variances, hours of work ahead of each craft, personnel status, etc.

Unusual situations affecting performance should be explained so that management men will better understand maintenance problems. Many maintenance difficulties develop from a lack of understanding on management's part; and a brief, efficient report creates an impression of an efficient maintenance organization—just about the first thing needed for management's backing and support.

Get that SCRAP Back to WORK!



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Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

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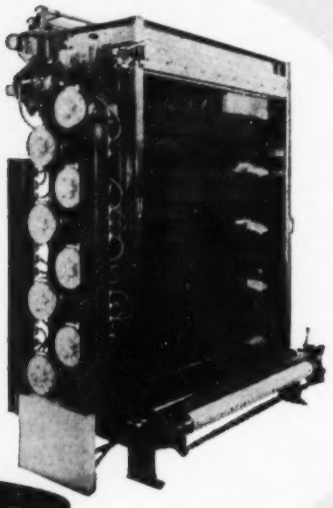
METLKOR® BRUSHES PREFERRED



NEW HERMAS MOTORIZED BRUSH

"Most of our customers prefer METLKOR BRUSHES," states the Hermas Machine Co., well-known manufacturer of clothroom equipment, "because:

"—The cores never warp or get out of alignment . . .
"—Bristles don't fall out . . .
"—Rolls are balanced to prevent whipping.
"—All of which is conductive to long brush life and even brushing."

Hermas uses METLKORS in this new motorized brushing machine, as they have in other Hermas brushes, because of their superior performance.

The metal cores, of aluminum, cold drawn steel, stainless steel, copper, or bronze, cannot sag, split, or get out of alignment.

Bristle is wound on the cores by our patented refillable process, firmly held with flat metal wire, and sealed with special baked plastic cement.

*Reg. U. S. Pat. Off.

M. W. JENKINS' SONS, INC.
Over Three-Quarters Century of Pioneering Brushes for Industry.
Cedar Grove, Essex County, New Jersey
TELEPHONE Verona 8-5327

"Lost" Carpet

(Continued from page 129)

ticket was investigated, and everything seemed to be in order. Here again ticket lengths, were checked against actual lengths, and the shortage persisted.

4. Rolls of other grades were then checked to see if this discrepancy occurred in their measurement. The difference did not occur in any other grade.

5. A look into the nature of the measuring device revealed the reason for the shortage. The surface of the measuring wheel provided insufficient friction against the back of this particular grade of carpet and allowed slippage. A length shorter than the actual was registered every time.

6. The measuring device was redesigned to increase the frictional contact, and the condition was corrected for all future production.

Statistics Recovered the Loss

The problem of correcting the ticketed yardages on rolls in the warehouse was still at hand, and there were two avenues of approach.

Each roll could be brought back to the plant, unbaled, rolled out on the floor, measured with a steel tape, rerolled, rebaled, and sent back to the warehouse. This procedure, of course, would involve considerable expenditure but would assure us that each ticketed yardage was correct within the accuracy of the tape measurement.

The other approach was to increase each ticketed yardage by a constant percentage. This approach could only be used if the percentage error were accurately determined and if this error were reasonably constant.

The lot-plot technique,* pioneered by the Hamilton Standard Propeller Co., solved the problem. Fifty rolls, selected at random through a specially prepared table of random numbers, were measured with a steel tape at the warehouse. The difference between the tape and the gross ticket yardage expressed as a percent of the total yardage (Fig. 1) was plotted as a frequency distribution (Fig. 2).

The distribution exhibits fairly normal characteristics: it comes to a peak in the middle and is generally symmetrical. The average error was 2.70% and the standard deviation for this curve was 0.36%. A close examination

* Lot plot is a method of acceptance sampling based on statistical analysis of inspection data from a standard sample size of 50. This method was designed by Dorian Shainin, chief inspector, Hamilton Standard Div., United Aircraft Corp. Further information can be obtained from these references: *Industrial Quality Control*, July, 1950, *Quality Control Handbook*, by J. M. Juran.

Always Uniform

Starch, as well as golf balls, requires precision control in every manufacturing step to maintain unvarying high quality.

That's why over the years Victor Mill Starch has become known far and wide as "The Weaver's Friend."

Victor provides better penetration, stronger warps, smoother surface, less shedding, fewer slashing problems. Rely on it . . . and the Keever man who serves you.

TEXTILE SALES DIVISION
1200 WOODSIDE BUILDING
GREENVILLE, SOUTH CAROLINA
Charles C. Switzer, Manager

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Corn, wheat and other grain products for industry since 1898

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B. F. Goodrich Chemical Company

Textile Highlights

FOR JUNE

Water-soluble size for processing nylon and acrylic fibers

CONVENTIONAL sizes have not proved successful in the processing of nylon and acrylics and other of the new synthetic fibers. Good-rite TS-20, a new water-soluble size, is tailored especially for these new fibers and meets the most stringent requirements of single-end sizing and insures better control of slasher sizing.

Good-rite TS-20 provides a good degree of abrasion resistance and gives improved machine efficiency in both knitting and weaving operations. It is not recommended for *wet knitting* because of its acidic quality.

This water-soluble size protects the fibers during processing by providing a tough, flexible film that has excellent adhesive qualities. There is a minimum of flaking and sloughing off the fiber. Being water-soluble, it is easily removed during the scouring process.

TS-20 is a 25 per cent total solids solution and can be extended by adding cold water to make it ready for use. Write for technical bulletin.

In addition to this water-soluble size, B. F. Goodrich Chemical Company manufactures a series of other textile chemicals that cover a wide range of uses and provide better quality finished materials. A full discussion of these will be contained in a new textile bulletin to be available shortly. For full information, write Dept. TN-2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

revealed one roll at 9% error, but this figure was traced to an error in recording the original yardage.

Since the function in Fig. 2 was constant and consistent, it then became a question of setting a limit on the error that would be involved if a constant percentage were used on these yardages. Naturally, customers who had been receiving rolls a yard or so longer than that which showed on the ticket would not register any complaint. However, what risks could we afford to take in the other direction?

This carpet was a contract grade, and a single sale usually involved several rolls. One roll would practically never be sold by itself. The maximum shortage on any given roll was set at 10 in. for 37 yd. This length was equivalent to an error of ¾ of 1%, or 2.1 times the standard deviation for this curve. Since this calculation applied only to the lower side of the curve (overages would not bring complaints), the chance for customer complaints was less than 2%.

This risk seemed reasonable, so the average error of 2.75% was used to reticket all the rolls in the warehouse. A conversion table was prepared for the use of the shipping department, and the yardage on all rolls in stock was thus corrected.

No Complaints Were Received

The only cost involved in this study was that of handling and measuring 50 rolls, the work of a few inspectors in one day. This cost was only a fraction of the estimated cost of remeasuring all rolls in the warehouse, and it was an even smaller fraction of the value of carpet "found" in the warehouse.

The final proof of the validity of this approach was that to date not a single shortage complaint has been received from the customers who bought this lot.

Production Planning

(Continued from page 95)

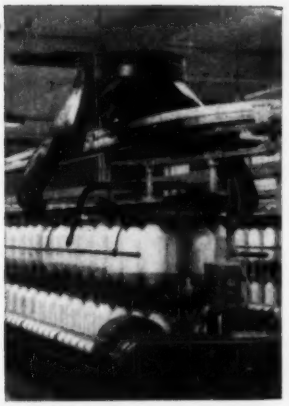
Expected production 3.58 yd. per loom per hour

Loom Assignment Is Scheduled

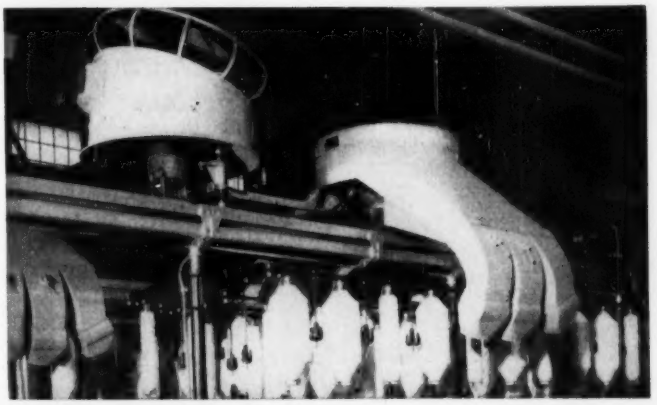
This fabric, Style 6 on the Master Schedule, is to be run on bobbin-changing looms. The looms are booked up until Jan. 12 (from Master Schedule); therefore, the order must be filled in 20 weeks of actual weaving. The number of looms necessary to meet this requirement is determined. The expected over-all loom efficiency is 85%; so 429.6 yd. of fabric can be

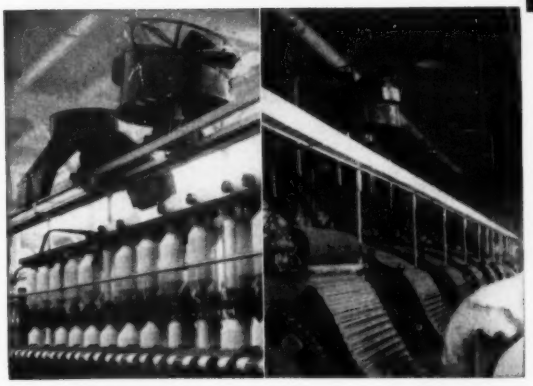
Reduce Costs and Improve Product with Parks-Cramer Traveling Cleaners

Traveling Cleaners remove lint from spinning frames and other textile machinery more thoroughly than by hand. Units run on track just above frames and direct blasts of air downward over the machine surfaces. Motion along track is either continuous or reversing to suit machinery layout and required cleaning period. Air distributors are of various sizes and shapes. Air volume, velocity and direction are adjustable. Electric conductors are enclosed and insulated for safety.



When **Flexible Cuff** extensions are used on Parks-Cramer air distributors, air blasts may be directed to relatively inaccessible or low down areas for more effective cleaning.





The **Up-draft Cleaner** improves textile mill housekeeping. Air blast is directed diagonally upward and revolves in a complete circle as the unit travels. Overhead surfaces are kept as clean as the frames.

PARKS-CRAMER TRAVELING CLEANERS have been used successfully since 1929. **17,000,000 spindles can't be wrong.**

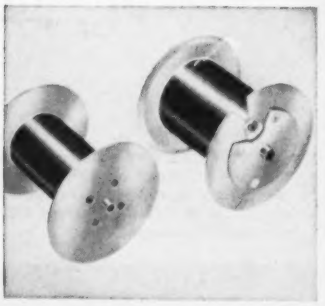
•

Parks-Cramer

Certified Climate and Cleaning Systems

Fitchburg, Mass. . . . Charlotte, N. C.

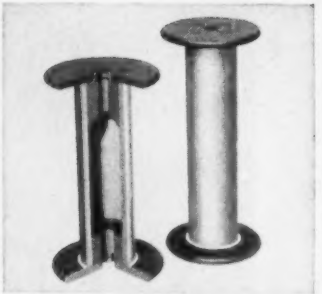
ALL TYPES OF BOBBINS
FOR FINE YARN PROCESSING

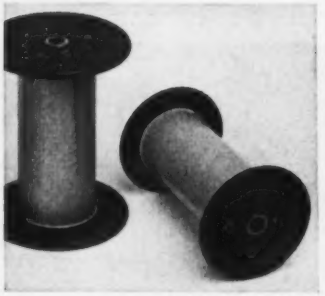


THESE ARE JUST A FEW—of the many different MACK bobbins currently manufactured to customer specifications.

MACK TAKE UP BOBBINS—with aluminum heads and molded bakelite barrels that withstand the crushing force of Nylon can be made with tail tie transfer feature.

MACK TWISTER BOBBINS—with bakelite heads and barrels withstand the crushing force of Nylon and continual steaming without distortion. Concentric and dynamically balanced, these Mack high-speed bobbins start balanced, stay balanced.



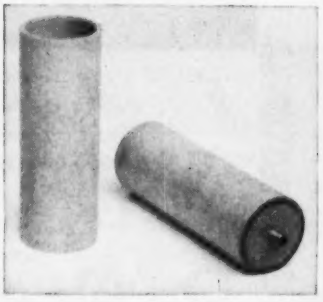


WINDER SPINNER BOBBINS—with bakelite barrels and vulcanized fiber heads give greater impact strengths and lower costs (than all-bakelite) where steaming is not required.

MACK SHIPPING BOBBINS—of all sizes and types are manufactured by Allentown.

NEW HEADLESS PACKAGES—fitted with stainless steel gudgeons or for mandrels are designed and manufactured to individual specification.

EVEN LOADING, VIBRATIONLESS RUNNING—Mack Bobbins are thoroughly tested for strength, concentricity, dimensional accuracy and vibration. Mack high-speed bobbins can be dynamically balanced on our Gisholt bobbin balancing machine.



ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

anticipated per loom per 120-hr. week. Therefore, $\frac{200{,}000 \text{ yd}}{429.6} = 465.6$ loom weeks. The average looms per week = $\frac{465.6}{20} = 23.3$. This number is taken as an arbitrary figure around which the general program is built.

The looms will be started up gradually, since 20 looms will not suddenly become vacant on Jan. 12. Mounting too many looms on a new style too quickly can be a strain on the entering department and the weave room, especially since extra attention is required for a new style.

The following loom schedule was adopted for this fabric, and the rest of the production planning was built around it. This program is coordinated with the Master Schedule (Fig. 1). Looms are put on this order as old orders are completed and the looms become vacant.

The schedule

Production week	Proposed looms
1	4
2	6
3	12
4	19
5	24
6	25
7	32
8	32
9	32
10	32
11	32
12	32
13	32
14	32
15	32
16	32
17	26
18	14
19	9
20	7
Total loom weeks	466

The planning department sees that all necessary equipment is available; a complete inventory of reeds is most important.

Yarn Supply Is Checked

The yarn requirements are:

Warp 100/40/3S dull acetate 59.4 lb. × 200 = 11,880 lb.
100/40/3S dull viscose 59.4 lb. × 200 = 11,800 lb.

Filling 150/40/2Z dull acetate 105 lb. × 200 + 1% for waste = 21,210 lb.

The planning department checks the available stock and discovers that there is not enough yarn available for the order; so sufficient yarn is ordered

TAPE anchors 80 yards of cloth for screening...in 5 minutes!

NOW...A TAPE WITH ADHESIVE ON BOTH SIDES fastens fabric to the silk screen table as fast as the lay carriage rolls it off! And "Scotch" Brand Textile Tape No. 400 holds the fabric evenly along the entire selvage, leaves no holes, no adhesive residue.

Lisbon Textile Prints, Jewett City, Connecticut, reports a cost saving of 40% with this new tape method. The job that formerly took six men 30 minutes is now done in 5 minutes by only two!

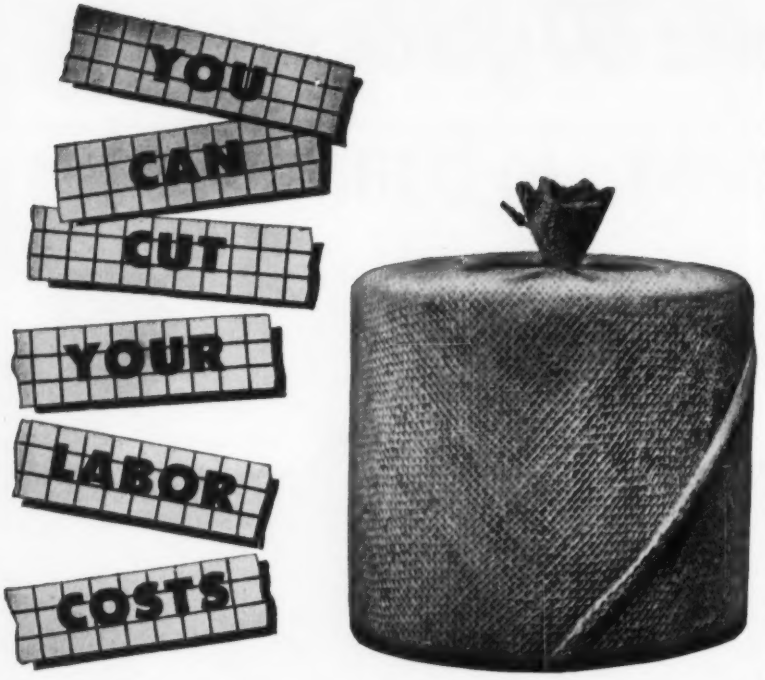
Other "Scotch" Textile Tapes are cutting costs on dozens of other textile operations at many of the nation's largest mills. There are tapes to speed warping, slashing and tabbing—tapes to speed packaging, tapes to speed shipping. And only "Scotch" Textile Tapes are "job-engineered" to be *right* for the specific application.

To see what these tapes can do for you, write us on your company letterhead in care of Dept. TW-63 for your copy of "Today in the Textile Industry." There's no charge or obligation, of course.

SCOTCH BRAND Textile Tapes

3M COMPANY

The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.,—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

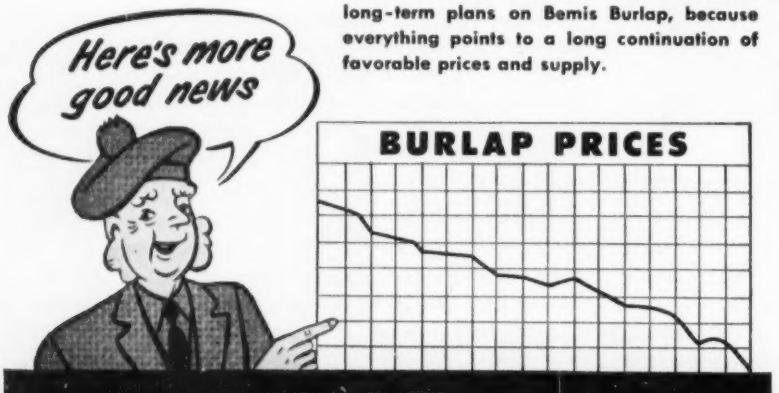


Use Bemis Tite-Fit Tubing!

Bemis Tite-Fit Tubing . . . the spiral-sewn burlap tubing with the 2-way stretch . . . is the fastest, easiest, most economical wrapping for rolls or bales of goods. Ask the Bemis Man to demonstrate.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.



Bemis

BEMIS BRO. BAG COMPANY

General Offices
St. Louis 2, Mo.

(8,000 lb. of 100-den. dull viscose, 9,000 lb. of 100-den. dull acetate, and 11,500 lb. of 150-den. dull acetate).

Next, warping and slashing are scheduled. Ten 20,000 yd. sets will be warped. From each of these sets, five loom beams with 4,000 yd. per beam are to be made. This program can be tentatively planned as follows:

Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13
Warping and Slashing	1	2	–	–	–	1	1	–	–	2	2	–	1

The 4% stretch in slashing will be lost in the take-up at the loom.

How To Keep Track of Production

The effectiveness of the planning program can be checked by comparing the various reports. For instance, by Feb. 9, 100,000 yd. had been warped (from Warping Status Report) and only 17,000 yd. had been woven (from Fabric Order Status Report). The Run-Out Report shows that 20,000 yd. is in process on the slasher and 20,000 yd. on the warper. Also, another 27,000 warp yards is still on the looms (subtract cut tickets from total yards mounted); so 16,000 yd. should be in reserve on loom beams. The Run-Out Report shows three drawn warps and one tie beam ready to be put in the looms: a total of four beams that account for the 16,000 yd.

Machinery-layout and production-flow charts are invaluable aids to keeping up with the production schedule. As each Set Order is issued for warping, a tag is put on the layout plan and followed through from warping to slashing. As warps are put on the looms, a small disk can be transferred to the corresponding peg on a weave-room-layout plan.

Pointers for Supervisors

(*Continued from page 153*)

such a man doesn't need to do much bootlicking in order to get ahead.

How To Train New Men

The second way in which the line supervisor may share in a management-development program is in helping the newly employed young man who has been brought into the organization for training for over-all executive work. Our industry today, while still recognizing the importance of building from within, also recognizes the need for new blood. For this reason an important part of management development is the hiring and training of the young textile school graduates and the graduates of the nontechnical schools as well.

Customarily these men are placed in

Is high capacity in small space your problem?

here's how makers of outboard motors solve it with **NEEDLE BEARINGS**

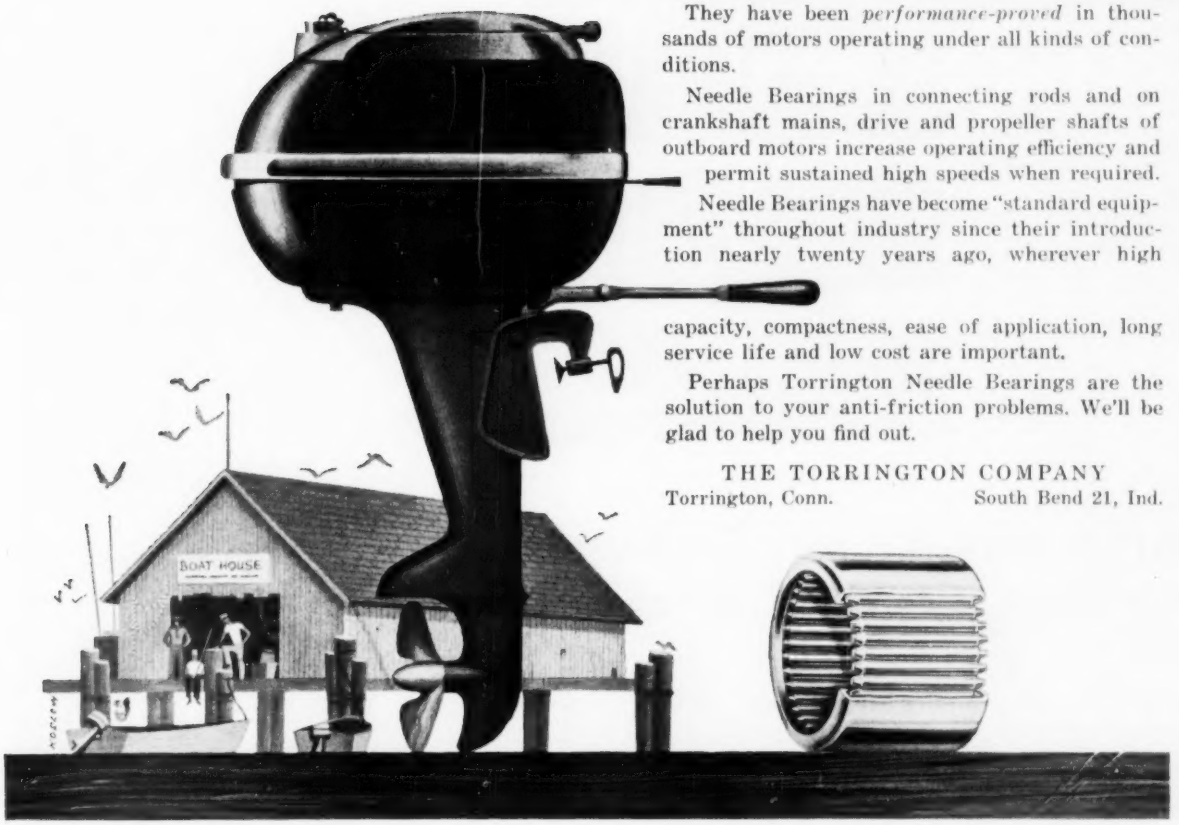
Leading manufacturers of outboard motors specify Torrington Needle Bearings because of their high radial load capacity, their compactness and light weight.

They have been *performance-proved* in thousands of motors operating under all kinds of conditions.

Needle Bearings in connecting rods and on crankshaft mains, drive and propeller shafts of outboard motors increase operating efficiency and permit sustained high speeds when required.

Needle Bearings have become "standard equipment" throughout industry since their introduction nearly twenty years ago, wherever high capacity, compactness, ease of application, long service life and low cost are important.

Perhaps Torrington Needle Bearings are the solution to your anti-friction problems. We'll be glad to help you find out.



THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

Trade-marks of leading makers of outboard motors who use Torrington Needle Bearings.

EVINRUDE MOTORS · MERCURY OUTBOARD · Martin · Scott-Atwater · Chris-Craft · Johnson · Elgin

ON A FIDELITY MULTI-DESIGN RIBBER

120 VERTICAL COLORS—5 HORIZONTAL COLORS

The Fidelity Multi-Design Ribber makes possible a wide range of plating designs and color combinations in True Ribbed Fabric—diameters up to seven inches.

Fidelity Machines are available in 10-step and 25-step types. For more information, write today for detailed literature on the Fidelity Multi-Design Ribbers.

When you are in the Philadelphia area, visit the new showroom at our plant—see The Multi-Design Ribber in operation.

Designers and Builders of Intricate, Automatic Precision Machines

FIDELITY MACHINE COMPANY, INC.

SINCE 1911

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

one department for a short time and then shifted to other departments to round out their general knowledge of textiles. Here's where the line supervisor can make or break an executive-development program.

If the supervisor himself knows how to supervise, he can probably show his new assistant. If the supervisor accepts his responsibilities as a teacher of this new young man, the boy may rise to high places in the company. If however, the supervisor resents the college boy or feels too busy to help him, the company's investment in the young man may be wasted and a potential superintendent or even potential president may leave for a better place or may become a disillusioned assistant foreman.

Supervisor Can Make or Break the Program

I read recently of two young men who graduated the same year from a good textile school. Presumably each had about the same potentiality. One was placed under the supervision of a bull-headed, driving type of superintendent who grieved, apparently, that the lash could no longer be used to get work out of people. The student picked up many of the superintendent's traits. The other boy was placed, by chance, with an entirely different type of man. His boss was one of those textile-mill people who get along with people and also produce at low costs. The second boy developed quite differently, and today he is ready for advancement. The first boy has to be retrained.

These two instances illustrate the importance of the supervisor, whether he is foreman, superintendent, manager, or president, in the development of potential executives. The foreman who is patient, understanding, and technically adequate is the foreman who will help develop strong, able executives.

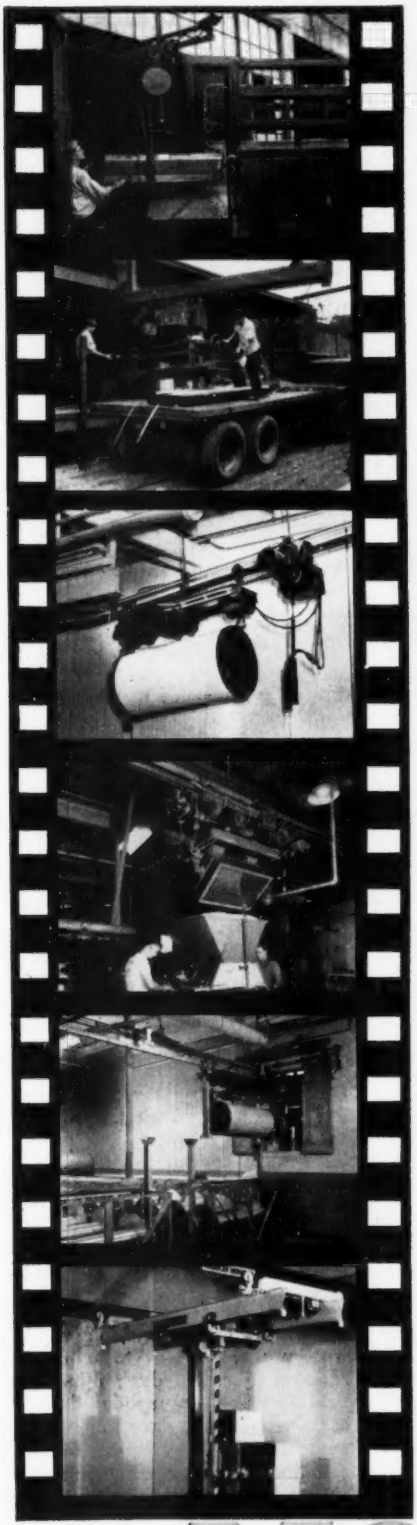
It's worth the effort. To a teacher there's no greater satisfaction than to see a successful student and be able to say, "That's my boy." The foreman today is training the future president of the company.

How To Select Men for Training

In the third place, the foreman has primary responsibility for selecting rank-and-file workers for training for executive positions. A good foreman, of course, has always done that. Now it's called management development.

Our industry today provides staff aids for the supervisor to help him with this part of his job. The personnel department will help by testing likely candidates, aiding in interviewing, helping keep records, and provid-

For more information, write direct or use Reader Service post card.



Quickly removes die blocks from trucks

Saves $30 each truck unloaded

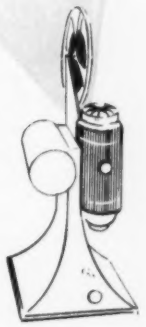
Delivers beams to another building

Automatic delivery of core sand

Automatic transfer of slasher beams

Stacker crane increases storage by 60%

a 16 mm movie that discusses handling problems common to every industry



Before you decide upon any material handling equipment, let us loan you "Up and Over". This 16 mm film shows many installations of American MonoRail overhead handling equipment. You will see hand operated to fully automatic systems—one or more that may be particularly adaptable to your operations. The film is educational, interesting, informative and shows the way to economical, safe and time-saving material handling. Your ticket of admission is only a note to us asking for a print. It will help us if you advise the exact date, as close as possible, when you wish to use it.

THE AMERICAN MONORAIL COMPANY

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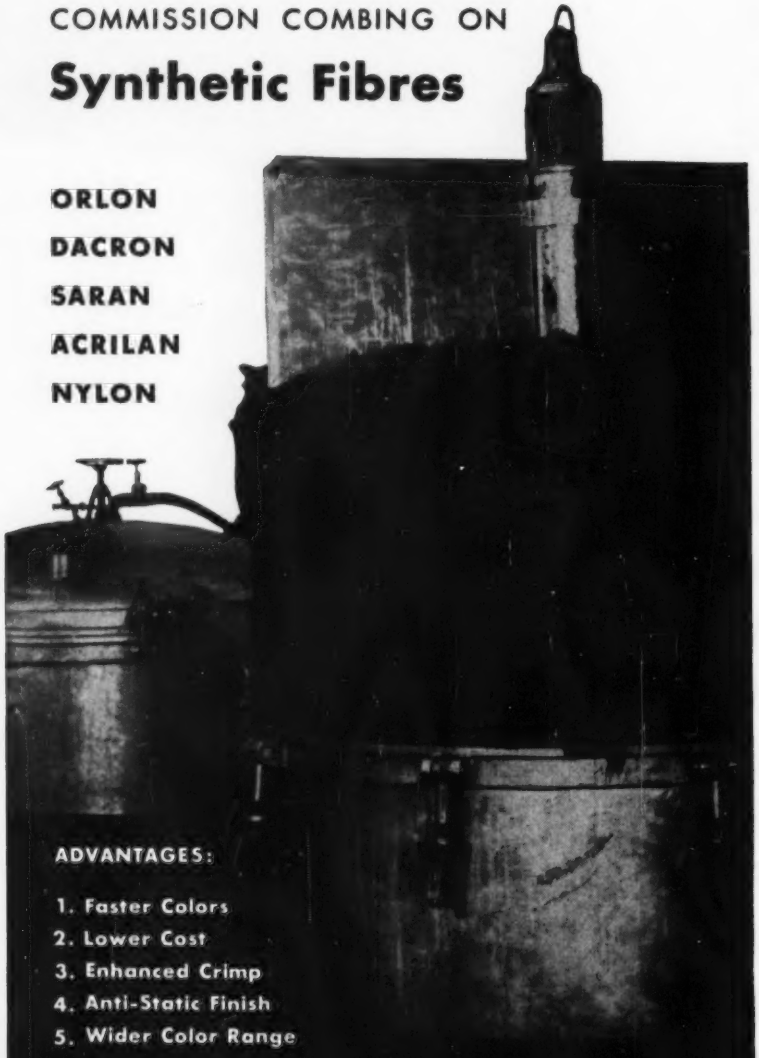
An Invitation to use our

HIGH TEMPERATURE STOCK DYEING and

COMMISSION COMBING ON

Synthetic Fibres



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Staple Dyed Orlon Top

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ing the foreman with a rating blank so that he can put down more than just general impressions of the worker. Nevertheless, the primary responsibility for selection and training rank-and-file workers for supervisory jobs must rest upon the foreman.

The development of good subordinates is certainly one test of a good supervisor. If you, the foreman, were to have a heart attack today and have to rest for six months, who would you recommend for your job? Would it be some relative you wished to push forward for his advantage, but not necessarily the company's? Would it be some bootlicker who has been pleasant to you and flattered your ego? Or would it be a good strong individual who often disagreed with you but in whom you sensed the spark of leadership, even though formal education might be lacking?

Your Choice Is Important

If it's the latter type you would recommend, you, the supervisor, are making your contribution to management development. Too many of us do not like to think about the day when we retire, and consequently we hesitate to select a successor. Having a pool of well-trained individuals, however, is one of the main reasons for an executive-development program. It has to start with the foreman.

Readers of previous articles of mine in this series may well have the idea that the foreman is the basis for everything in industry. The foreman doesn't have to raise capital for expansion, but there are not many other places in industry today where the line supervisor does not have primary responsibility. Certainly, however, there is no greater challenge to the supervisor than that of developing himself or developing others for the important industrial-management jobs in the textile industry of the future.

Exploring the Community

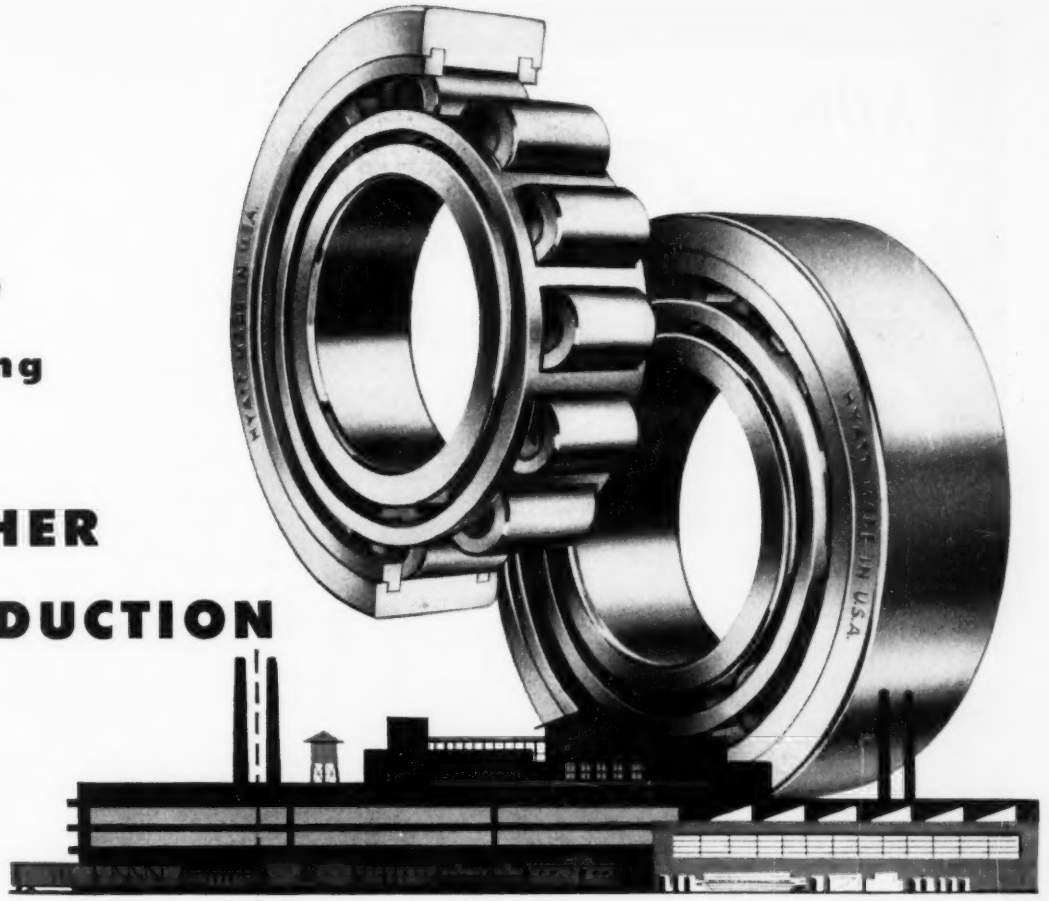
(*Continued from page 155*)

each room having multiple windows with venetian blinds to temper the glare on too-bright days. Fluorescent lighting is used throughout the building. Classroom floors are covered with brown and tan asphalt tile. The combination of cream tile and plaster gives a dado panel effect on the wall and makes housekeeping easier since the tile extends halfway up the wall, beyond the reach of small hands and the inevitable fingerprints.

Students have the most modern desks. Tackboards have replaced blackboards to some extent; but where

For more information, write direct or use Reader Service post card.

When you're pushing for HIGHER PRODUCTION



what's so important about BEARING LIFE?

It's a matter of economics. When a bearing fails in service, your cost is not only the expense of dismantling and reassembly—it's also the loss of production because of downtime. *When a bearing goes, it takes a good chunk of your profits with it!*

Is it any wonder then, that Hyatts are the preferred bearings in the textile industry? Manufactured from select steels and subjected to the most rigorous inspections, Hyatt Roller Bearings offer consistently high quality—*they're performance-proved to last longer at peak efficiency.* So make sure of "built-in" operating economies—specify Hyatts for new installations or for changeovers. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

 For more information, write direct or use Reader Service post card.

With labor costs as they are, the fast, *mechanized* TENNANT System can save you more *today* than ever—besides eliminating scrubbing. Here are 5 reasons why TENNANT "dry cleaned" floors are cleaner . . . brighter . . . safer—yet *cost you less:*

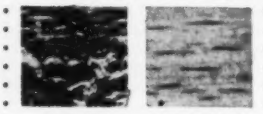
1 **Requires less manhours** for floor maintenance because floors can be cleaned *faster* . . . stay clean longer. Unlike rough, dirt-catching scrubbed floors, Tennant-cleaned floors are smooth, hard, dirt-resistant . . . clean up like magic! Saves time and expense.

2 **Makes floors easy to clean.** Fast, low-cost "dry cleaning" with a Tennant Machine keeps floors bright, durable. Only daily care is dry mop sweeping.

3 **Cuts accident costs.** Helps keep floors DRY and safe. Aids morale.

4 **Makes floors last longer** by protecting against dampness, decay and wear.

5 **Helps prevent losses** of yarn and cloth from splinter-snags and dirt.



HERE'S WHAT HAPPENS when you stop scrubbing your floors and switch to economical Tennant "dry cleaning."

Microphoto at left shows typical surface of a scrubbed floor. Note how water has broken down top wood structure and caused rough, jagged, dirt-catching splinters. This makes floor hard to clean, and it breaks down rapidly under heavy traffic.

In contrast, microphoto of a Tennant "dry cleaned" floor (right) shows how the bright, smooth, protectively sealed floor resists dirt and wear . . . and is easily cleaned with minimum manpower.

Write Today! Learn how mechanized "dry cleaning" can save you money. Ask for new bulletin "HOW TO GET BETTER RESULTS IN TEXTILE FLOOR MAINTENANCE."

G. H. TENNANT CO.
2586 North Second Street
Minneapolis 11, Minnesota

The way to finer floors
TENNANT
Floor Maintenance System

ESTABLISHED 1870

OFFICES IN PRINCIPAL CITIES

blackboards are used, they are green and the chalk is yellow—a new combination designed to eliminate glare and eyestrain.

Ample coat closets are provided throughout classroom areas. A lavatory for that quick hand-wash is in each room. Germicidal lamps in each classroom, over each drinking fountain, in each corridor, and in the clinic help keep the air free from air-borne germs.

The students' restrooms are spacious and attractive. Gray ceramic tile runs from floor to ceiling, the floors are of terrazo tile, and the mirrors are placed at different levels to serve youngsters of varying heights.

On the same floor level as the classrooms are the school offices and a well-equipped first-aid and clinic room. The clinic has two beds, their cocoa-brown spreads and turquoise blue blankets blending with the room's cheerful decor. A specialist's chair, treatment cabinet to meet all requirements, two instrument tables, a double-stand basin, a sterilizer, and the usual patient's chair, stool, and chrome lamp make the clinic equivalent to a doctor's office. A half-bath adjoins the clinic.

On another floor level are a large auditorium with stage and dressing room, the music room, cafeteria, private dining room, and kitchen. A library and art room, recreational room, and audio-visual room give Unity School a complete layout for every educational purpose.

The auditorium seats nearly 400 people. Its comfortable rust-velour and green-leather chairs match window drapes and the stage curtain. The stage itself is well equipped with proper backdrop, a lectern, a baby grand piano, and other furnishings.

The nearby music room is built with a tiered floor for greater instructional ease. The art-room equipment includes an electric kiln and potter's wheel for ceramics students, and there is ample space for storage and display of their work.

The teachers have been considered, too; an attractively furnished lounge has been provided for them.

Throughout textile areas, mill interests contribute some $10 to $12 million annually to educational projects through individual and group scholarship funds and foundation programs. But in no single mill community has a more ambitious school project than new Unity been carried through. The program of school expansion and replacement undertaken by Callaway Mills Co. and LaGrange charts the answer for other communities and companies.

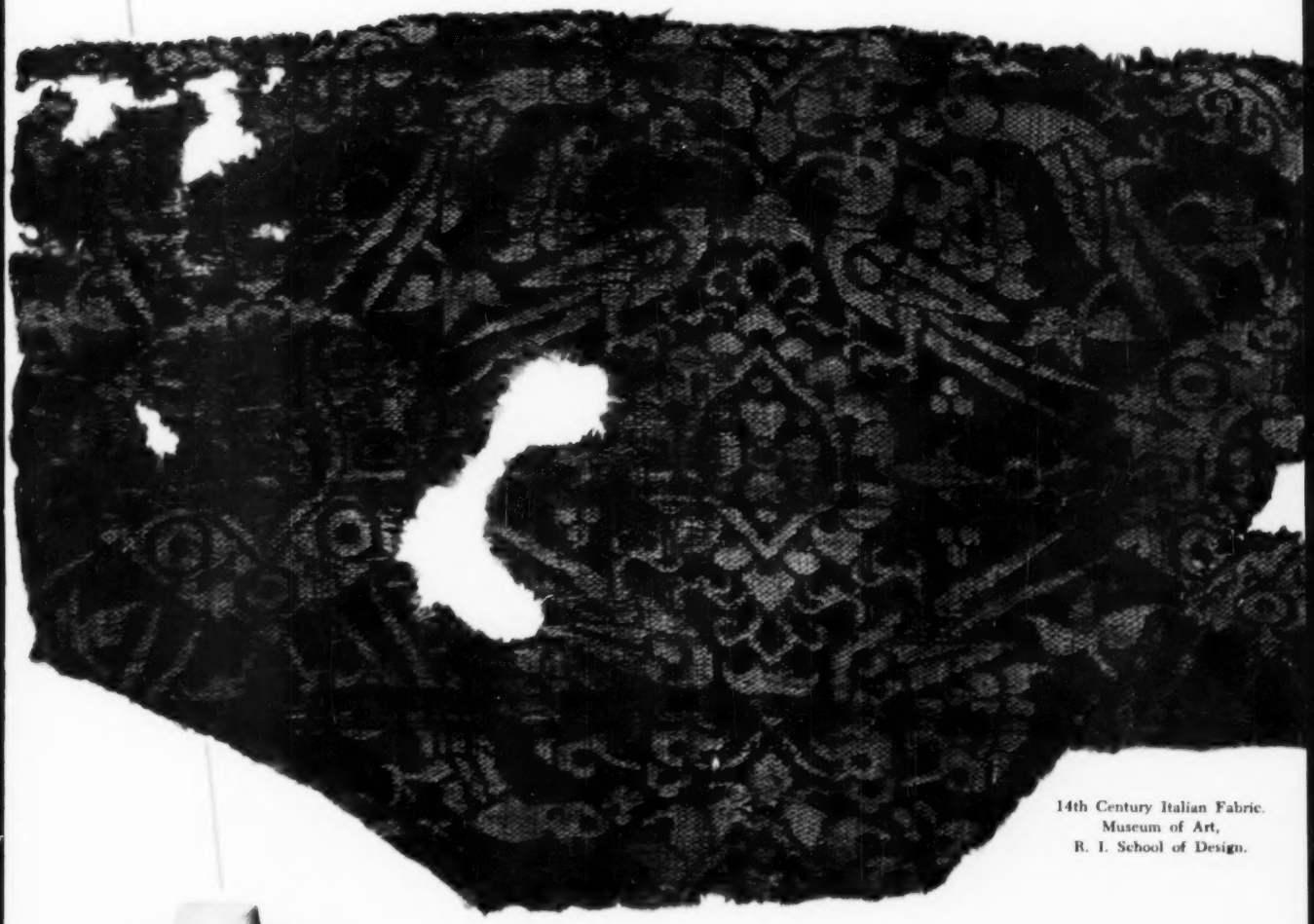
. . . then as now

YARN DYED FABRICS were Supreme

Dante's report on the Inferno and Boccaccio's naughty tales were recent "best sellers" when this yarn dyed fabric was loomed in Italy, as the Renaissance dawned.

Color was used to enrich its unique design. And, as in every age, the patterns were created from colored yarns, to achieve the utmost in originality and acceptability.

Today, yarn dyed fabrics are still the finest. For exceptional quality in your colored yarns and for expert advice in their use, trust to Franklin Process — yarn merchants and the largest package yarn dyers in the world.



14th Century Italian Fabric.
Museum of Art,
R. I. School of Design.

Franklin Process YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD

Providence Philadelphia Greenville Chattanooga New York Representative — 40 Worth Street

when the service is as important as the product

Service is a valuable feature of any modern product. For example: An electric calculator is as useful as an auxiliary brain — but could you ensure its unfailing "sanity," without the service man on call?

In card clothing, too, service is as important as the product itself. Quality alone does not suffice — unless the product is quickly and conveniently available, unless you get the best type of clothing for your purpose, unless efficient installation service is near at hand, and you can count on technical assistance when you need it.

Like Ashworth Card Clothing, Ashworth Service is tops. We have 3 factories, 6 repair shops and 7 distributing points — all strategically located in major textile areas. These assure you of adequate supply, convenient repair service and prompt deliveries.

At any time, you can have our staff of practical card men give you technical advice, survey your cards and recommend necessary repairs. Write to our nearest plant for further information on Ashworth Service.

ASHWORTH BROS., INC.

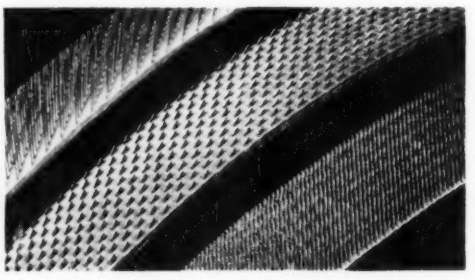
American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)

* Factory† Repair Shop‡ Distributing Point

Ashworth **CARD CLOTHING**

3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS



Round Table

(*Continued from page 173*)

entry into the thinking of men in his charge.

When a foreman turns his information into recognition of a worker's main outside interest, as a hobby usually is, the foreman finishes up by boosting morale and thus production efficiency. And problems of production and efficiency in many cases don't ever have to be referred to in the conversation at all!

An observant foreman can learn a lot about a score of hobbies simply by talking with people interested in stamp collecting, or gardening, or woodworking, or photography, or painting. He can get help from books in his local library or by reading hobby magazines.

Of course, asking Charlie how the horseshoe game went over the holiday, or telling Jim about a new fisherman's paradise you just heard about, will not give the same production and efficiency results as an implemented time study of a job. But recognition of a man's hobby puts him in the proper frame of mind to do better on the job and consider suggestions for improvement.

GEORGE M. DODSON

Harrisburg, Pa.

Brookside's Maintenance

(*Continued from page 134*)

production periods and replaced with spare motors.

Most loom-motor failures at Brookside are caused by worn bearings or shorted-out motor leads.

Except for experimental models, all loom motors are equipped with sleeve bearings. All looms are in the process of being motorized by the electric-maintenance department; and these motors, too, have sleeve bearings.

Spinning motors of 15 to 25 hp. on four-frame drives are the biggest problem in motor maintenance, but these drives are gradually being replaced with single-frame drives.

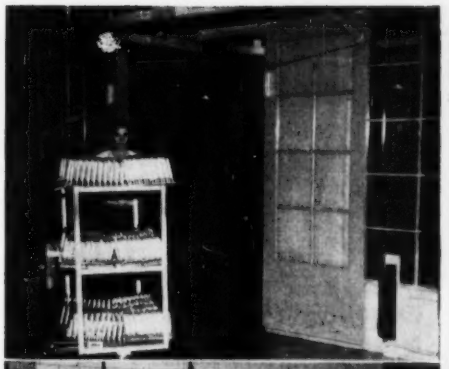
Motors Are Rewound At Outside Shops

Motors returned to the electric shop to be serviced are torn down and cleaned. Worn bearings are replaced, and all motor work except rewinding is done in the shop. Motors were formerly rewound at Brookside, but a cost analysis showed that it was cheaper to send them to an outside electric shop for rewinding.

Extra motors of each type are stored in the electric shop.

The fluorescent lights are cleaned by the department where they are located. If an electrician works on a lighting unit, he cleans it; but otherwise it is each production depart-

NEW



Bloomsburg Weaving Mills' Fernbrook Park Plant — note how Magic Doors accommodate modern overhead conveyor system.

OR EXISTING

Company's Bloomsburg plant — Magic Doors speed two way traffic.

STANLEY® Magic Door CONTROLS

UP OPERATING EFFICIENCY
CUT OPERATING COSTS

Back in 1947, Bloomsburg Mills installed the first set of Magic Door Controls in the older mill at Bloomsburg, Penna.

Since then Bloomsburg Mills have added four more sets of Magic Door Controls at this mill — AND they have installed nine sets of Magic Door Controls as original equipment in their up-to-the-minute new Fernbrook Park Mill.

WHY SO MANY RE-ORDERS?

because Magic Doors increase operating efficiency, reduce operating costs. No one has to stop productive work to tug and pull at heavy plant doors.

because Magic Doors keep conditioned air, humidity and room temperature at constant levels.

because Magic Doors speed mill traffic. They open on approach, stay open until passage is clear, then close automatically.

because Magic Doors pay for themselves. Magic Doors are saving many textile users many thousands of dollars each month. Yet Magic Door Controls with pull cord, regular Stanley operator for "in" and "out" door handling two way traffic, that uses existing air supply on existing 60" doors, can be purchased for as little as $347.25 F.O.B. New Britain. Send for full information today.

STANLEY® Magic Door CONTROLS

REPRESENTATIVES IN PRINCIPAL CITIES

THE STANLEY WORKS, MAGIC DOOR DIVISION
3136 Lake St., New Britain, Conn.

☐ Without obligation please furnish full information on Stanley Magic Door Controls.

Company Name_____

My Name_____

Address_____

City_____ Zone_____ State_____

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

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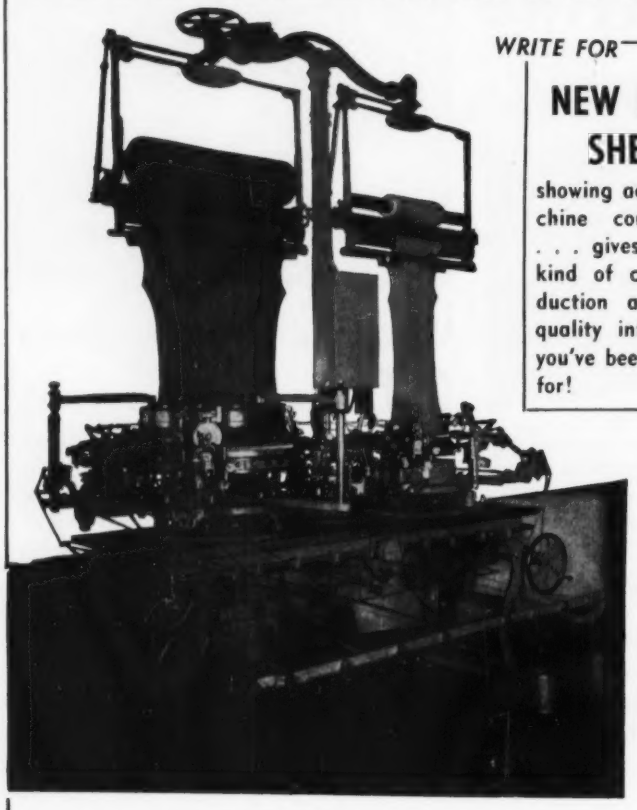
ONE OPERATOR

running Tompkins D-2 Double Head Spring Needle Knitting Machines

WILL TURN OUT TWICE AS MUCH FABRIC

as one operator running Multiple Feed Latch Needle machines with same number of bobbins, plus

PERFECT CLOTH all the way!



WRITE FOR

NEW DATA SHEET

showing actual machine comparisons . . . gives you the kind of cost, production and cloth quality information you've been looking for!

fully modern!
TOMPKINS D-2 DOUBLE HEAD SPRING NEEDLE KNITTING MACHINE

YOU CAN TAKE YOUR CHOICE of lower cost per yard (with less operators) or doubled production with perfect cloth all the way . . . with a maximum versatility of fabrics!

WRITE OR PHONE FOR YOUR COPY of the NEW DATA SHEET which covers such important subjects as Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings!

SEE THE TOMPKINS D-2 IN PRODUCTION ON WHATEVER YARN OR FABRIC YOU WISH . . . SEE FOR YOURSELF HOW THE NEW SPEED AND NEW ECONOMY OF THIS MACHINE WILL ENABLE YOU TO COIN NEW PROFITS FOR YOUR MILL

TOMPKINS BROS. CO.

ESTABLISHED 1846

629 Oneida St. • Syracuse 4, N. Y.

ment's job to keep its own lights clean.

If a light has to be replaced in any department, an order is sent to the electric shop, and the shop replaces the light. The second- and third-shift electricians check and replace burned-out lights one night each week.

Electric power trucks are used throughout the plant and warehouses. The mobile units for the dispensation of food are pulled by electric trucks.

All Power Trucks Are the Electric Type

All the electric trucks are maintained by the electric shop. Two battery-charging stations are available for recharging batteries. One station is located in the electric shop, and the other one is placed in the cloth room.

The largest job being done by the electric department at present is the rewiring and relocating of all fluorescent lighting units.

The lights are strapped to 1½-in. pipes suspended from the ceiling every 10 ft. by ½-in. steel rods. A ½-in. pipe is laid over the 1½-in. pipe and is used as a conduit. A plug-in outlet is located at each fluorescent unit.

The lights are neat in appearance and are easily kept clean.

The electric department maintains three of the plant elevators. The others are serviced by the elevator company that installed them.

Here's the Program For Compressors and Boilers

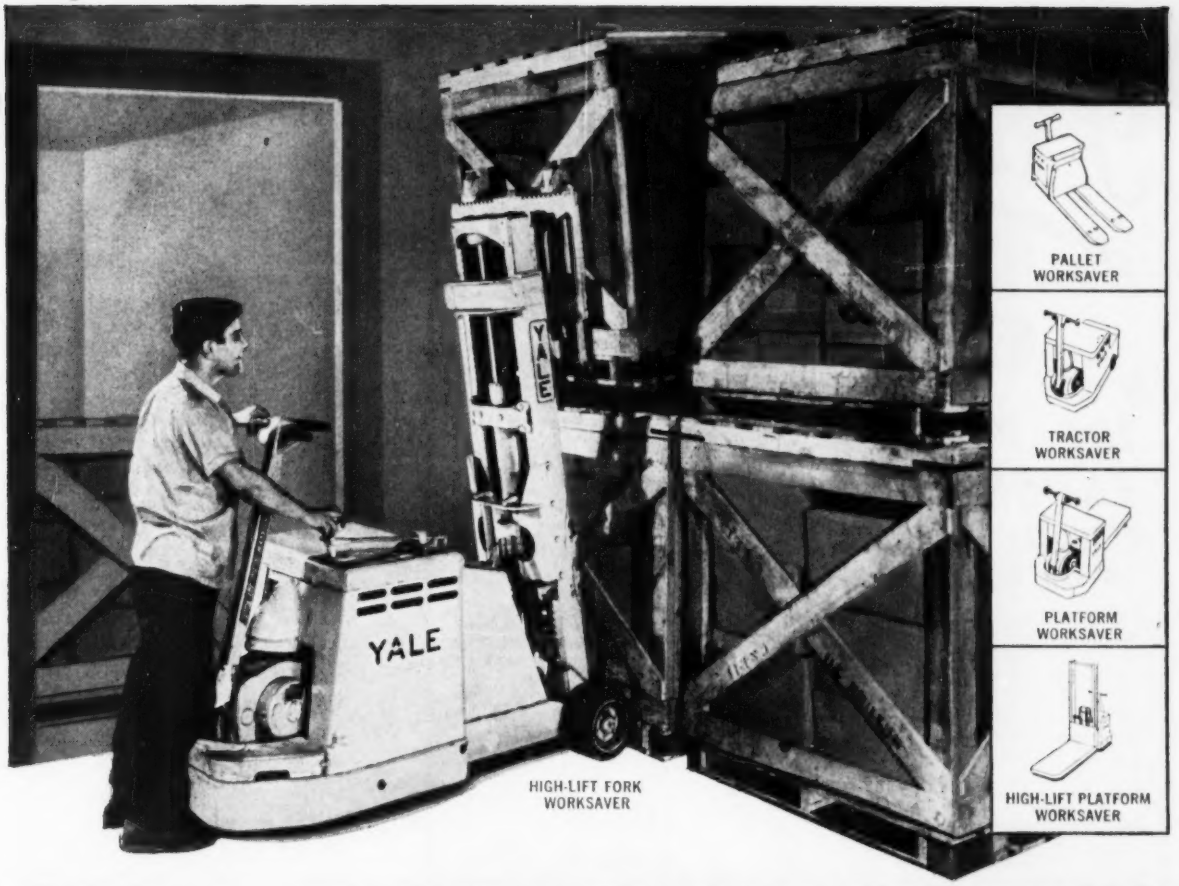
Air compressors and boilers are constantly maintained under the direction of a working foreman. In addition to two vacuum pumps, the mill is equipped with eight compressors ranging in size from 8x10 to 13x16 and in capacity from 40 to 125 hp. Two 550-hp. boilers supply the plant with steam.

Compressor valves are cleaned every six months, crankcase oil is changed every four months, oil filters are cleaned every four to six months, and the compressors are completely torn down and reconditioned each year.

Well Water Reduces Condensation in Air Lines

A well, 12 in. in diameter and 200 ft. deep, furnishes water for the compressors, boilers, and toilets. An adequate supply of water is available at all times. This water system is completely disconnected from the city water system that supplies the water for other operations. However, if the well should fail, the well water can be quickly replaced with city water.

Because the well water is of uniform



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temperature, condensation is reduced in the air lines to the humidifiers.

Vacuum-pump valves are cleaned at least once each month and are often cleaned twice each month. The regular cleaning day is every fourth Saturday of the month.

Except during periods of extremely cold weather, one of the two boilers can supply all the steam needed by the plant. As a result of having an extra boiler most of the time, each boiler is operated one week and is shut down the alternate week.

During the week a boiler is out of operation, the heads of the four drums are knocked out and the boiler is thoroughly cleaned.

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Each Department Stores Its Own Supplies

Each department is sufficiently large to store many of the supplies needed.

Blank-gear and pulley stock and other parts frequently needed by the machine shop are stored at one side of the shop. The sheet-metal shop stores its own supply of metal, and the carpenter shop stores and supplies its own lumber.

Motor bearings, wiring, switches, and most supplies needed by the electric shop are stored in bins in the shop.

When the supplies for each maintenance-department shop are received by the main-plant supply room, they are sent to the shop and are charged directly to the production department where they will be used.

Other supplies kept in the main-plant supply room are charged as they are issued.

The general supply room is under the supervision of the master mechanic, and all records of the costs of the maintenance department are kept by the supply clerks. From these basic records, the mill costs department figures the over-all costs of plant maintenance.

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revolutionary new advance in wire stitching

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Acme Steel Arcuate Stitching forms flat wire into arc for greater strength.
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In Acme Steel's new Arcuate stitching method, flat stitching wire is formed into an arc, increasing its column strength, making a smoother stitch with lighter wire, delivering up to 42% more stitches per pound of wire. Faster, too!

New Acme Steel Arcuate Stitching cuts wire costs 24 per cent

HERE'S HOW IT WORKS: Wire stitching has long been favored for assembling and closing of cartons of all types. Now "Stitching Headquarters"—Acme Steel Company—announces a new stitching method: Arcuate Wire Stitching.

In Acme Steel's new Arcuate Stitching method, regular flat stitching wire is formed into an arc by the stitching machine, making a stronger stitch so you can use lighter gauge wire for boxmakers' joints or any other stitching jobs. Increased column strength makes each stitch easier to drive. Stitches drive straighter, clinch better, hold tight.

RESULT: You save 24% in wire costs. You get 42% more stitches from each coil of wire (using .103 x .014-inch instead of .103 x .020-inch wire, for example). Arcuate Stitching virtually eliminates machine jamming—reduces down time and produces perfect stitches more consistently. This means that you can stitch more cartons per day, and get a better-looking carton every time.

It's easy to adapt your present equipment. There are conversion parts-kits for most popular model stitching machines.

CALL your Acme Steel representative for all information. Or, for a free folder giving complete details and a stitched sample, write to Acme Steel Products Division, Dept. TW-63, Acme Steel Company, 2840 Archer Ave., Chicago 8, Illinois.

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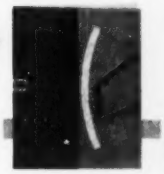

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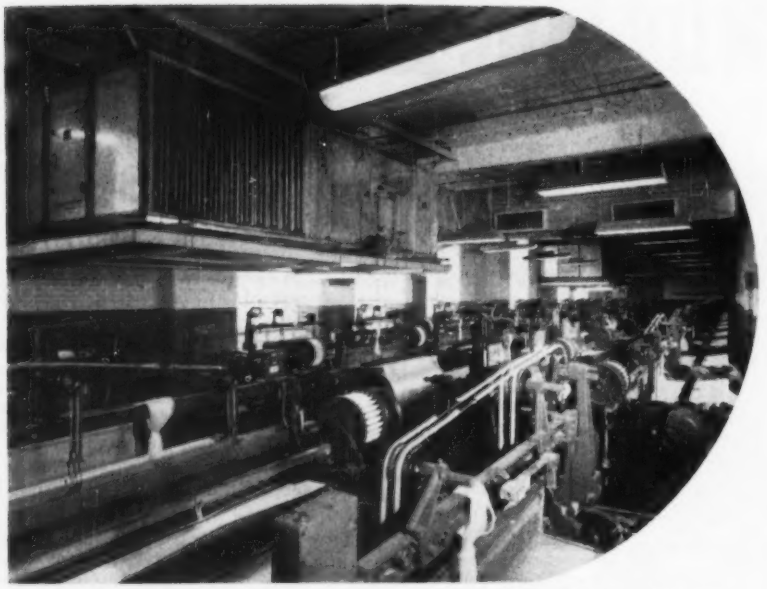

Synthetic yarn weaving room with new WHITE suspended air washers in Grendel plant of The Abney Mills, Greenwood, S. C.

The new White suspended air washer system employs a spray generating chamber and specially designed spray generator. The unit is all aluminum construction which makes it possible to be installed in existing mills without major reinforcing construction, alteration of present building or construction of apparatus houses.

The system is designed so that it requires minimum maintenance and service. Flexibility of application makes it possible to add new units if internal load changes.

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Yarn Variation

(Continued from page 145)

herent cotton properties and the effect of preparatory processes also influence yarn strength, appearance, and uniformity.

Unit-Weight Variation

Variation in unit weight deserves the greatest attention in any program for improved yarn regularity both because of its effect on other factors of irregularity, and because of the certainty of its reduction under a program of better process control.

Normal card sliver has a relatively low variation. Variation increases slightly in the first and second drawing processes. Roving and spinning frames increase the short-length variations.

Results obtained from short-length unit-weight variations are much different from those shown by yard-by-yard weighings. Yard weights normally show a reduction in variation from card sliver to finished drawing. This reduction in variation is believed to be caused by the evening effect obtained from doubling.

Plotting of short-length weight variations of drawing sliver shows that these variations are of such a short cycle that they are lost in yard-by-yard weighings. The evening effect of doubling is still present in sufficient measure to equalize the variations in back stock. But at the same time, new irregularities are introduced by the drafting rolls.

Drawing Considerations

There appear to be three forces at work in the drawing process: (1) The irregularities of previous processing are being reduced by doubling; (2) the fibers are being placed in more parallel order by drafting; and (3) new irregularities, of equal or greater magnitude than before, are being made by roll drafting. If great care has been taken to prevent web tension from causing irregularities on the cards, it is safe to assume that these new irregularities are actually caused by the drafting rolls. These latter variations in unit weight are of much shorter cycle than those shown by consecutive yard weighings.

Tests indicate that these latter short-cycle variations are made in increasing amounts from card sliver to finished yarn even if perfectly uniform stock is fed to the back of each process.

Comparisons with yard and skein weights show that short-length variations are a true indication of what occurs in each process. The complete prevention of these variations is im-

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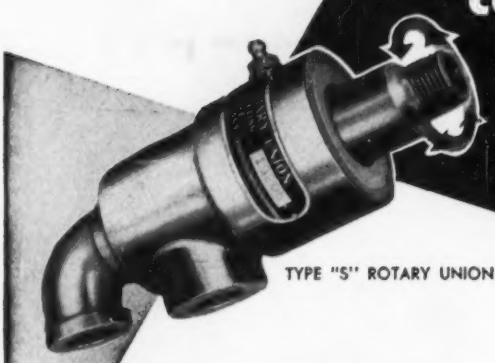

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possible because of faults inherent in the drafting processes. But variation reduction is possible through the setting up of the best possible mechanical and operating conditions. Knowledge of the nature and magnitude of variations aids greatly in their correction. New types of evenness testers show percentage values and the frequency of these short-cycle variations and make corrections easier.

The elimination or reduction of any irregularity, from cotton bale to spinning frame, is reflected in the greater evenness of the finished yarn. The starting point for improvement should be the careful selection of mixes in the opening room. Large mixes aid in maintaining uniform blends over longer periods. Small bundles from every bale in the mix should be put into the feeders at every feeding cycle.

Efficient trash removal in opening, picking, and carding is also important for good yarn appearance. Correct feed-roll settings and beats per inch can improve final yarn regularity and thus strength. A close check on individual yard weights as well as the total weight of finisher laps is essential. Correction to moisture regain is necessary if a mill wants to have an even weight of laps delivered to the cards.

Settings Important

Correct settings and keeping all card parts in proper condition reduce neps and improve the appearance and regularity of a sliver. Careful piecing-up of laps, prompt doffing of full cans, and discarding of light sliver after stripping can eliminate some of the long-cycle variations in finished yarn.

In drawing, both long- and short-cycle variations can also be reduced by the correct setting and keeping in proper condition of top and steel rolls, by the elimination of back lash in driving gears, by insisting on reasonable uniformity of back-stock unit weight and staple characteristics, and by using the correct tension and trumpet sizes. Correction of drawing-sliver yard weighings to regain reduces the number of draft-gear changes required. Regain correction also prevents the see-saw variation of heavy and light sliver that is inherent in extreme changes of relative humidity.

With the elimination of doubling in the creel of roving and spinning frames, an increase in both long- and short-cycles of variation is to be expected unless previous processes have been very closely controlled. This increase is more pronounced in the short-cycle plotting in the long-cycle. Correct roll settings and excellent mechanical condition of drafting units, correct frame tension, and uniformity

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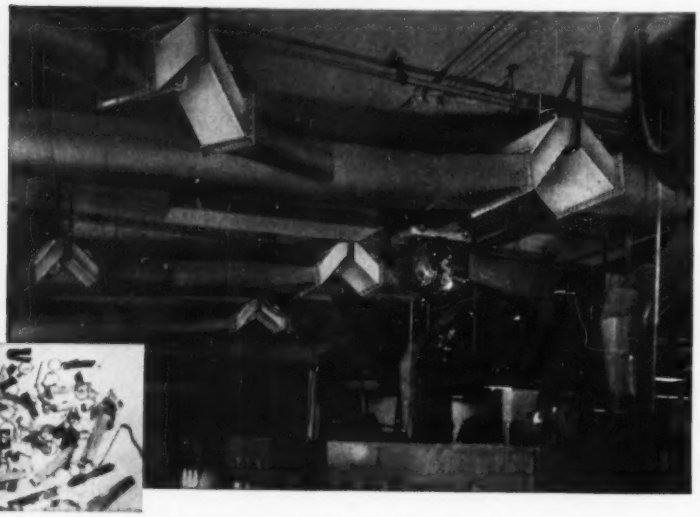
LEADING MILL Reports:

95% OF FIRE DANGER ELIMINATED IN SPUN RAYON PNEUMATIC LINES

5 ERIEZ Magnetic Humps Remove 3 lbs. of Tramp Iron Weekly

Five Eriez Magnetic Humps, installed in pneumatic pipelines between the opening room and pickers, and between waste hoppers and the central pipe to the pickers, are removing three pounds of spikes, travelers and other tramp iron (see insert) each week from spun rayon at a leading southern mill. Prior to the installation of the Eriez equipment, the company experienced two or three fires each month in their lines from sparks generated by tramp iron striking against processing equipment. "Since the Eriez Humps have been in operation, 95% of the fire danger has been eliminated!" reports the plant superintendent. Results: thousands of dollars saved in stopping fires, preventing machinery damage and increasing overall production.



Eriez patented Magnetic Humps prevent fires by removing *all* tramp iron bits in textile pneumatic lines before they get a chance to strike sparks or cause machinery damage. These powerful units require no attention aside from periodic removal of collected metal.

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1. Available for air lines ranging in size from 2⅜" to 20" diameter.
2. Adapters available to convert pipe or outlets of any shape to the hump's rectangular opening.
3. The hump causes material being cleaned to change direction twice, causing a tumbling action . . . tramp iron impinges against magnets.
4. Cover adds to longitudinal stiffness . . . prevents tampering and accumulation of iron on backs of castings with consequent shorting of magnet circuit.
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in character and unit weight of stock in the creel assume great importance on roving and spinning frames. Trial settings, varied in increments of 1/32 in., is one good method of finding the setting best suited to a particular stock and drafting conditions. Settings can start at 1/8 or 3/16 of an inch longer (depending on unit weight) than the length of staple, with an increase or decrease of 1/32 in. at each trial.

On spinning frames, the amount of twist in the back roving can also affect both long- and short-cycle variations. An additional factor of spindle-to-spindle tension variation must also be reckoned with. The selection of the correct traveler number and circle is important, and the ring diameter should be suitable for the yarn number being spun.

Vat-Color Ageing

(*Continued from page 147*)

very large heat release at the cloth surface when water is absorbed from a steam atmosphere, as in ageing.

Gradually Increase Steam Flow

In discharge printing with the older type of roller ager, the general rule is that halos (white margins round the printed patterns) will occur at the beginning of the run and diminish as the length of the run increases. Color yield will decrease towards the end of a very long run. A gradual increase in the flow of steam (governed by ordinary water-gauge pressure) will overcome this difficulty.

In Indanthrene steaming where the steam passes from an outer shell, through the cloth, and to a perforated inner spindle before discharge, the outer laps of discharge-printed material and application vat prints will tend to be flushed or "sprung," while the inner portions are free from this fault. This condition indicates a definite rise of temperature during the run.

"Heat of Solution" Raises Temperature

Solution of the crystalloid constituents of the print paste—such as potassium carbonate, sodium carbonate, glycerol, and sodium sulfoxylate formaldehyde—tends to elevate the boiling point. Therefore, if saturated steam is fed into an ager through which prints are being run, it will, after contact with the prints, become superheated to a temperature equal to the boiling point of the solution on the prints.

Experiments with potassium carbonate and sodium carbonate with varying proportions of reducing agent, with and without glycerol, show a general tendency for development of

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Oratol L-48: *Sodium Salt of a Sulpho Ester of a Fatty Acid Amide*
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Parnol 40—40% active
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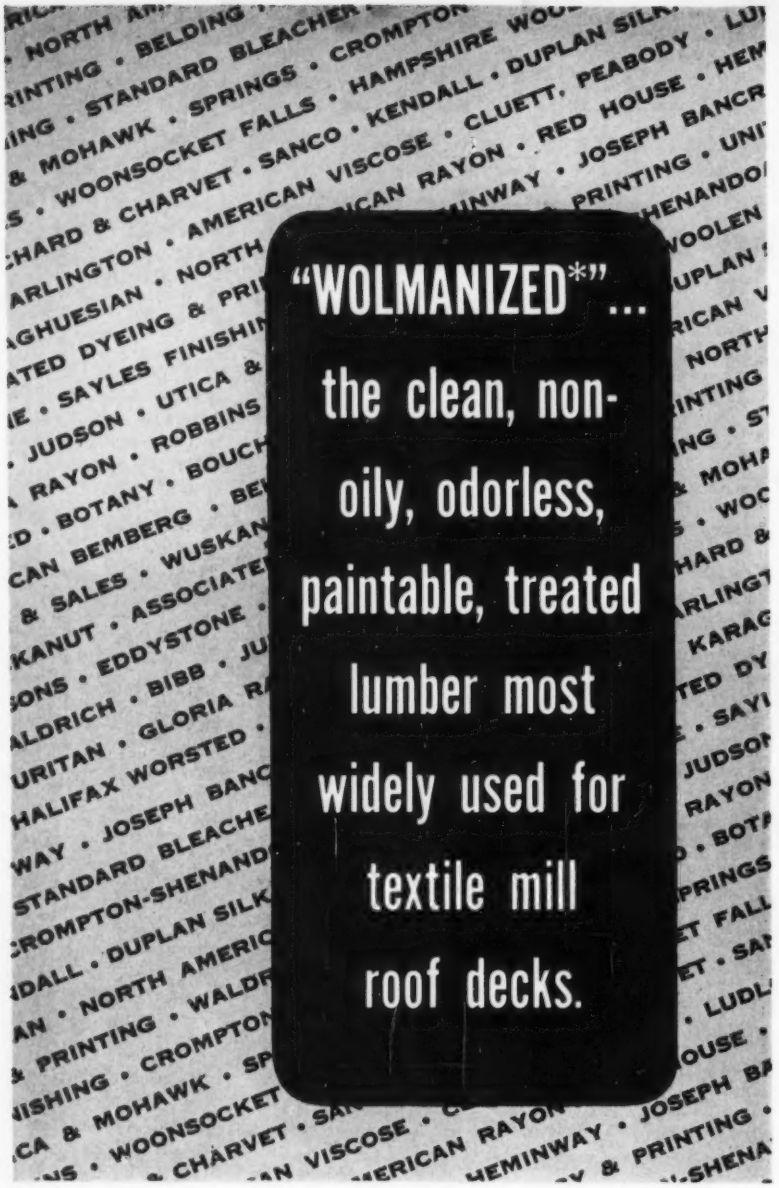

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Lumber

superheat during solution of the chemical ingredients. Sodium carbonate shows less rise in temperature and a higher concentration of solutes.

While some heat is generated by solution of the ingredients, by far the larger amount of superheat is due to the latent heat of steam condensing on the cloth and print paste and the subsequent interaction of steam and crystalloid components of the print paste.

Keep Some Pressure in Agers

It is now agreed that some pressure is essential to good ageing. The amount of pressure varies in individual cases. In some quarters it is maintained that a slight water-gauge pressure, say ½ to 1 in., is sufficient to show that the ageing chamber is free from air. Others maintain that several inches of water-gauge pressure is necessary to dissipate the excessive heat generated during the ageing process.

Generated heat during ageing may be caused by condensation of water vapor (said to be the main source of rise in temperature), heat of chemical reaction, and heat of solution of chemical reagents and leuco dyestuff.

If the flow of steam is insufficient to dissipate this excess heat, evaporation at the printed-cloth surface will replace water absorption, with an adverse effect on dyestuff solution and on transfer from the print paste to the fiber.

Uneven Heat Causes "Banding"

The most favorable range is from 212 to 218° F., corresponding roughly to the temperature between the bottom and the top of the ageing chamber. The bottom temperature is governed by the steam rising from the boiling water in the bottom of the machine. As this steam rises to the upper region, the heat-generating factors already listed come into play and the top-drying or superheating effect of the steam chest is noticeable.

In some cases, the top-drying effect is reflected in the fault known as "banding," or lap-to-lap unevenness. This fault is indicated by the regular intervals of the lighter portions of the print, which correspond to the tops of the loops or festoons of cloth.

The necessary flow of steam may be generated by increasing the rate of evaporation from the water-bottom or by introducing a spray of saturated steam at both sides of the top. This latter expedient is thought to have a good effect on the dissipation of superheat at the top layer of the machine.

Check and Correlate Temperatures

Accurate temperature readings from different portions of the machine are difficult to obtain because of continu-

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PLEATS STAY IN AFTER WASHING!

Dynel-viscose-acetate fabric holds its knife-pleats as shown in this unretouched photograph of suit—taken after skirt was laundered, dried *without pressing*.

CREASES STAY SHARP THROUGH DRENCHING!

Shower bath test on suit of Dynel-viscose-acetate fabric. Note how fabric retains press even when wet.

Unretouched photo shows same suit dried but not pressed. Note how creases remain in trousers, how suit dried wrinkle free.

DYNEL gives you ALL the crease and shape retention of ANY OTHER FIBER at substantial savings

Performance will tell... it's

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DYNEL IS MORE ECONOMICAL

Blend	Comparative Costs of raw materials for 10 oz. sq. yd. of undyed fabric	Comments
50% rayon 50% acetate		Little shape or crease retention when wet.
50% rayon 25% acetate 25% fiber #2*		Good shape retention – press stays in when wet.
50% rayon 25% acetate 25% DYNEL		Good shape retention – press stays in when wet. Lower fabric cost means a wider market, increased sales, greater profit.

*highly publicized for its shape retention

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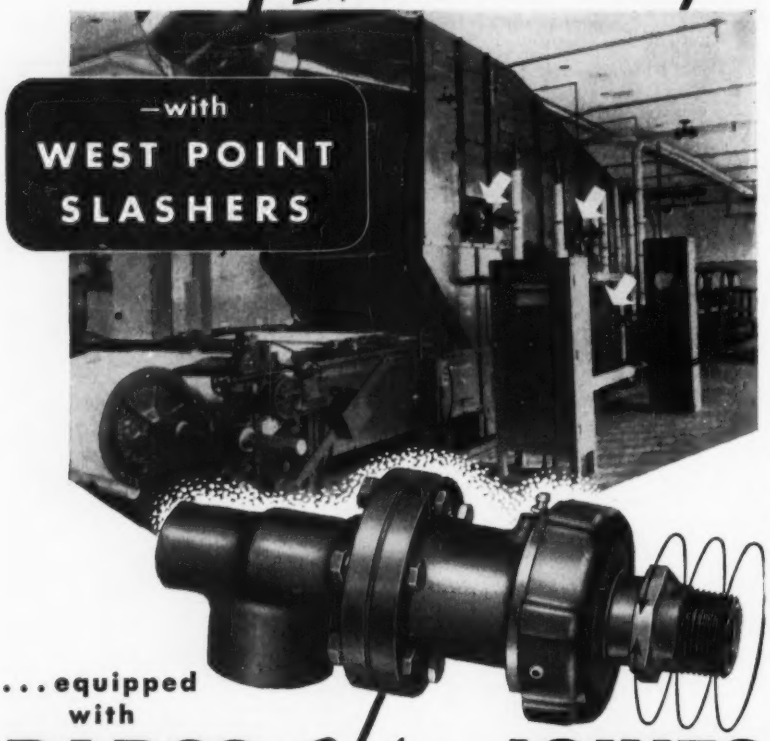

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ous festooning or looping of the cloth. This method makes it impossible to insert thermometers between folds of cloth during running as in the older type of roller ager.

Attempts should be made, however, to read temperatures at at least four points: (1) between the bottoms of the cloth loops and the surface of the water-bottom, (2) between the tops of the cloth loops and the steam chests at the top of the machine, (3) at the front of the ager before the entry of the cloth, (4) at the back of the ager after the cloth exit. Correlation of these temperatures will give a fair indication of conditions.

While ideal conditions may lie between 212 and 218° F., experience indicates that from 216 to 220° F., or slightly more, will give satisfactory results in most cases.

When ageing is done under pressure in this way, it is essential to seal all outlets except the ventilator pipes and the intake and outlet of the chamber itself. When the pressure has been decided upon, safety valves set for that pressure should be fitted in the ventilator pipes.

Under such conditions of pressure, precautions should be taken to prevent loss of steam through faulty joints, especially at the foundations and at the point of contact with the water-bottom.

The use of graycloth during ageing is common practice, and it may be observed generally that the graycloth tends to reduce temperature.

The value of a graycloth was first noted with the ordinary roller-type ager, with which it seemed to be fairly common practice to run a moistened graycloth at intervals through the machine between batches of printed goods.

Graycloth is still used with the festoon or loop-type ager, especially with heavy blotch prints where the heat of reaction between adjacent loops of cloth is high. The presence of a cool, moist graycloth has a good effect on color fixation and levelness.

The use of the graycloth is not necessary when you are ageing very light patterns on lightweight materials, three festoons of which may be run continuously and simultaneously provided a good flow of steam is kept up without overheating.

In some cases it is the practice to moisten the gray slightly before use; but if the gray is used continually, it will absorb enough moisture during steaming to provide the necessary cooling effect.

Steam Flow Is Critical

It is obvious that a good steam flow is essential to good ageing conditions. The circulation of steam throughout

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ENERGETIC is a powerful, concentrated non-ionic detergent that combines high soil removing and soil suspending ability, preventing redeposition on the goods. Because it is supplied 90% active, the quantity of ENERGETIC required to do a specific job will seldom exceed ⅓ of the conventional anionic material requirements. When desired, builders may be added, further reducing your scouring costs.

ENERGETIC is outstanding as a detergent for use in kierboiling, jig scouring and dyeing, package scouring and soaping off, dye levelling, soaping off naphthols, wool skein scouring, raw wool stock scouring and some other washing operations. ENERGETIC will prove in its first test in your mill how economical and efficient it is. Its essentially neutral character, the almost complete absence of salts, its stability in acid and alkaline solutions, and its controlled suds characteristics make ENERGETIC extremely valuable for textile washing operations. And it's completely compatible with anionic or cationic finishing agents, soaps and oils. It is available in 30 and 55-gallon steel drums, and also in 5-gallon containers. Contact your local Armour Industrial Soap representative or write Armour's Industrial Soap Department for further information on ENERGETIC—the proven textile detergent.

ARMOUR *Industrial Soap Department*

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Hedrich-Blessing Photograph, courtesy of the EDWARD HINES LUMBER CO.

THERE ARE A LOT OF GOOD TRUCKS on the market, and a lot of good arguments for each. But this fact remains: *more people buy CLARK gas powered trucks than any other make.* Since we produce *all* power types . . . gas, electric, diesel and L.P. gas . . . we feel we're in a good position to explain why:

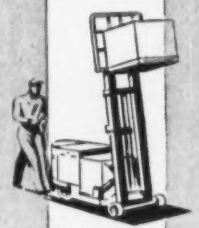
CLARK Horsepower Is Capacity-Rated To Your Requirements—Why pay for excess horsepower that you'll never use? CLARK gives you five engines, rated according to truck capacity. You get plenty of power for the job, without a lot of gas-consuming excess. When you buy a CLARK in the size that's right for you, you get the proper horsepower, too.

CLARK Electric Fork Trucks

CLARK Flexibility Meets Any Work Condition—A wide range of speeds and a constant source of power enables your gas powered CLARK to handle any work condition. Flexibility means 'round-the-clock performance of normal operations, with a built-in reserve of power for peak loads and emergencies. And for long hauls, you can't beat the speed and economy of the gas powered CLARK. . . . . .

CLARK Attachments

No matter what your handling requirements are—there's a CLARK machine to do the job. Electric or gas powered fork trucks, POWRWORKER hand trucks, industrial towing tractors—they all give you quality-value for your money. That's why industry buys more CLARKS than any other make of truck. When you're in the market for materials-handling equipment, talk to your local CLARK dealer first. Most people do!



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AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

the chamber is dependent on three factors: (1) cloth movement, (2) convection currents, and (3) steam flow.

Some printers fear that if ventilators are used too much for the outflow of steam, intake of air will take place at the entering end. This condition can exist only if pressure is allowed to drop too low. Pressure should be adjusted so that intake of air is impossible.

The consumption of steam by the ager is a matter of prime importance. Where the machine is faultily constructed, consumption of steam can rise to costly figures. If proper precautions are taken in jointing and sealing, good results should be obtained on the average-size machine with 2,500 to 4,000 lb. of steam per hour. Machines of this size are capable of handling 400 to 600 yd. on a single festoon. Double festooning makes this figure 800 to 1,200 yd. and treble festooning 1,200 to 1,800 yd.

Books of Interest

Another Report on the New England Situation

REPORT ON THE NEW ENGLAND TEXTILE INDUSTRY by the Committee Appointed by the Conference of New England Governors, 1952; Seymour E. Harris, Chairman, 234 Littauer Center, Cambridge 38, Mass.; paper, 317 pages, $2.

This highly publicized report on what's wrong with New England textiles and what might be done about the situation is divided into three parts. The first part is a 10-page summary that includes recommendations for reducing North and South wage differentials, setting up minimum wages in U. S. textile manufacturing, pushing unionism in the South, equalizing workload differentials between North and South, increasing the productivity of Northern mills, forming a permanent New England textile committee, tax changes in New England, and reduction in other high New England costs directly or through subsidies.

The second part of the report analyzes the problem in New England in detail and with some specific cases. Plenty of charts and graphs are included.

The entire last half of the study goes into complete details, with many more statistics arranged in neat tables. Cross reference to basic sources of information are

WHY ALGOSOLS

AN EASY ROAD TO VAT FASTNESS

ALGOSOLS are water soluble esters of vat dyes. They produce the same brilliant shades and have the same fastness properties as the parent vat dyestuffs from which they are derived. On cotton and rayon they are more level dyeing and have better penetration than ordinary vats. Prints are smoother and clearer than normally applied vat dyestuffs. On wool Algosols have superior light and wash fastness without impairment to the quality of the wool. The method of applying Algosols is simple and inexpensive.

COTTON

Mercerized cotton piece goods of constructions otherwise difficult to color, have outstanding smoothness and penetration when dyed with Algosols. The shades of colored yarns used for cross-dyed effects in striped shirtings, etc. are not affected when over-dyed with Algosols. Mercerized and other types of cotton yarn dyed in package dyeing equipment are uniform, evenly colored from outside to center and free from crossovers.

WOOL

Suitings dyed with Algosols have excellent fastness properties even in light shades. Blankets and knitting yarns have outstanding fastness to light and washing. Algosols are recommended for dyeing slubbing and yarns in circulating machines. Shrink-proofed wool dyed with Algosols has excellent fastness to light and repeated washings. Wool can be dyed with Algosols without impairment to the quality of the wool.

RAYON

Rayon piece goods composed of filament, spun rayon or filament-spun rayon yarn when dyed by the continuous method or on the jig have solid, clear shades and excellent fastness. Rayon skeins are easily dyed on the 'Cascade' type machine. Algosols are excellently suited for dyeing packages and cakes in pressure dyeing equipment.

PRINTING

In roller, screen and resist printing prints are smoother and colors clearer than the normally applied vat dyestuffs from which they are derived. Algosols have excellent light and wash fastness and do not crock. Blotch printed drapery fabrics have smooth grounds with excellent fastness to light and washing. Algosols are ideal companion colors for Rapidogens and Fast Color Salts.

MIXED FIBERS

Suitings and dress goods of spun rayon and wool blends dyed in solid shades meet all fastness requirements. Special effects can be obtained on cotton-wool and rayon-wool mixtures by dyeing the wool and leaving the cellulosic fibers undyed or on viscose-acetate blends the viscose can be dyed fast color and the acetate tinted to yield two-tone effects.

COST

The simplicity of application, saving in time, lower cost of chemicals, superior dyeing and printing results offset any increase in dye cost over ordinary vats in light and medium shades. Not infrequently Algosols prove cheaper in light shades.

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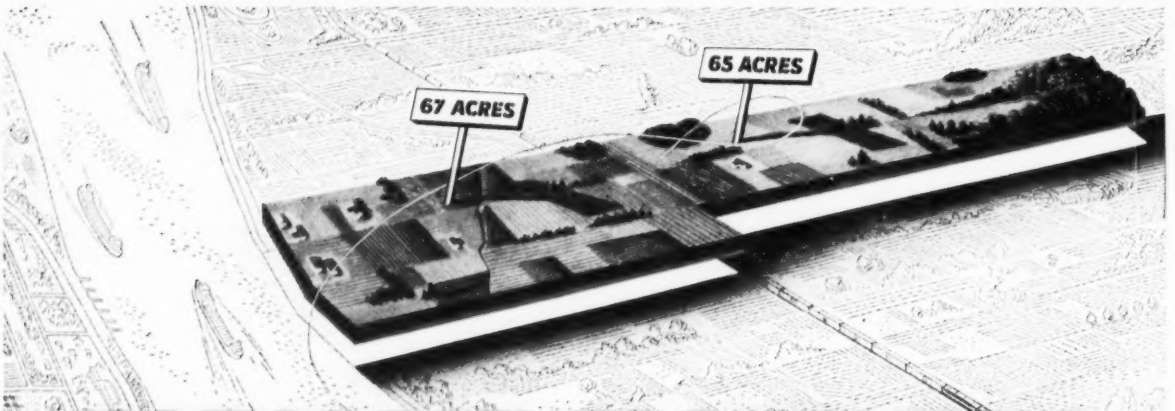

CANADIAN PLANT SITE

for sale in the fast-growing Sarnia, Ontario area

An important new industrial development centers around the neighboring cities of Port Huron, Michigan, on the U.S. side, and Sarnia, Ontario, on the Canadian side, of the St. Clair River. Its advantages include exceptional facilities for shipping by rail or water to all parts of Canada or the U.S.

One plot is at Courtright, 12 miles south of Sarnia. It contains 132 acres, level and well drained. It has an 800 foot frontage on the St. Clair River and extends across Ontario Highway 40 and the C&O tracks. It has an unlimited supply of excellent water. Natural gas is available and electricity is supplied by the Hydro Electric Power Commission of Ontario. This desirable site could be subdivided to accommodate several smaller plants.

Let us send you a confidential "Pin-Point" survey

on this attractive Courtright site. Or, if this plot is not just what you are looking for, tell us what you want and we'll find it for you.

Write to the Chesapeake and Ohio Railway Industrial Development Office nearest you.

Terminal Tower, Cleveland 1, Ohio
General Motors Building, Detroit, Michigan
Chesapeake and Ohio Building, Huntington, W. Va.

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given at the bottom of almost every page of this section.

Much could be said, pro and con, about this report, which statistically at least bears out the Blanchard Report of a year and a half ago. But the conclusions given in this latest report are more to New England's liking.

For a frank appraisal of this latest report by the editor-in-chief of TEXTILE WORLD, see page 4 of the January issue.

That Natural Wonder—Cellulose

CELLULOSE, THE CHEMICAL THAT GROWS, by William Haynes; Doubleday & Co., Inc., 575 Madison Ave., New York, N. Y.; cloth, 386 pages, $4.

This is a popularized history of that remarkable raw material, cellulose, in a study from Marco Polo's day to the present. It is an appreciation of the work that went into unlocking the secrets of cellulose and of the groundwork that had to be laid before we could enjoy today's wonders of rayon, nylon, lacquers, lethal explosives, and even a cure for ulcers.

Included as reference data are a cellulose glossary, a chronology of events in the field, and appendices of statistical and technical data.

Textile Definitions Brought Up to Date

FABRICS, 7th Edition, by Grace Denny; J. B. Lippincott Co., 333 W. Lake St., Chicago 6, Ill.; cloth, 221 pages, $5.

It has been five years since the sixth edition of this book appeared. This seventh edition takes into account the developments that have come along in textiles since that time.

The book is divided into four parts: (1) how to tell the different textile materials apart by simple tests; (2) 75 pages of yarn and fabric definitions; (3) 90 pages of alphabetical explanations of general textiles, terms, processes, and finishes; and (4) a 14-page reference and appendix section.

The book is an up-to-date supplement for textile reference books and dictionaries that have not been revised recently.

One Man's Inventiveness Founded an Industry

FATHER OF AIR CONDITIONING, Willis Haviland Carrier, by Margaret Ingels; Doubleday & Co., Inc., 575 Madison Ave., New York, N. Y.; cloth, 170 pages, $2.50.

The story of the development of air conditioning in the United States is largely the story of the founding and growth of Carrier Corporation. And the story of Carrier Corporation up to three years ago was largely the life story of inventor-engineer Willis Carrier, its founder.

The author had 96 interviews with Dr. Carrier during the last two years of his life. These interviews, arranged into 13 chapters and a chronological table of events, form the basis of the book.

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Install looms FASTER... EASIER...

and cut operating costs besides with **ISOMODE TEXTILE PADS**

ISOMODE* TEXTILE PADS permit you to install looms on any type floor without bolting, floor damage or special preparation. Cut to size and placed under legs of equipment, they absorb loom vibration and eliminate stresses and strains resulting from rigid mountings. This keeps machines in place, even without cementing—reduces noise—cuts down maintenance of both building and equipment.

Engineered from Du Pont "Neoprene", Isomode Pads last for years. Mill installations have revealed that not only are they one of the most effective mountings you can get, but also one of the most economical.

Even a few looms mounted on Isomode Textile Pads are enough to show you convincing proof of the Pad's remarkable effectiveness. Why not see for yourself? Get more details by mailing in the coupon.

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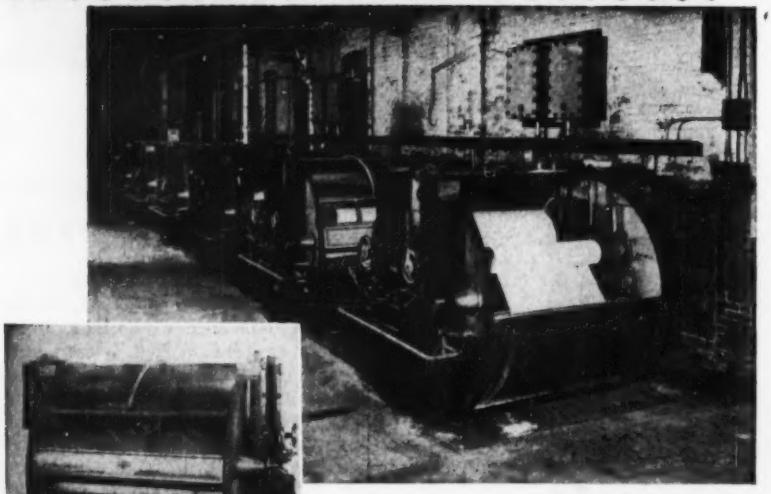

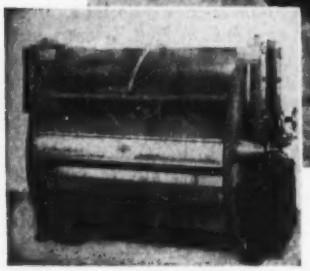

Enclosure in closed position

This enclosure now makes it possible to maintain controlled mean temperature throughout dyeing time of nylon, acetate and other synthetics.

As a consequence, dyeing time is shortened. Uniform stripping is assured in redyeing or changing the color of a fabric. Chrome blues and other difficult colors can be jig-dyed. Colors are well dispersed, and level dyeing without shifting is possible. In soaping, temperature is prevented from rising too high and so causing a dull finish. Steam and water are saved.

Other advantages:

New design of hood saves space—no overhead obstructions, roller doors on bearings swing down and under jig when open — minimizes dripping — prevents steam blast toward operator when hood is opened — no cables, chains, counterweight posts to obstruct. Jig enclosure can be fitted to any jig — note big windows for easy observation of interior when jig is closed.

Manufacturers of modern, custom built metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc. of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

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Pioneer Fabricators of Stainless Steel Equipment

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Phila. Area: Marple Organization, 1200 Commercial Trust Bldg., Philadelphia 2, Pa.

New York State: Sanders Industrial Equip. Co., 1351 Broadway, Albany 4, N. Y.

South: Henry H. Hersey Co., 44 Norwood Place, Greenville, So. Car.

New England: Harris & Underhill, 446 Statler Bldg., Boston, Mass.

chronology of air-conditioning improvements in general, in the founding and growth of the Carrier organization in particular, or merely in a tribute to an outstanding man with an idea he developed in the typical American manner to form a new industry, this book is good.

Timestudy Techniques and Inventive Schemes Studied

PRODUCTIVITY AND PROBABILITY, T. F. O'Connor; Emmott & Co. Ltd., 2817 Otis Drive, Alameda, Calif.; paper, 193 pages, $1.50.

Applying a fresh mind to the old problem of precise timestudies, the relation of machine interference to productivity rates, the laws of probability, and the role of incentive schemes in our industrial economy, the author has written a monograph that covers this complicated field from a rather high level. Plenty of formulas are given to illustrate the thesis of the text that productive capacities can be measured exactly and human beings spurred to greater heights if the proper timestudy rules and techniques are applied.

Mill Maintenance

Establish a Central Shop For Belting Maintenance

Transmission belts should be given the care and attention that will insure maximum production, minimum downtime, and the safety of personnel. However, because belting has been used so long, users tend to think they know all about it and do not bother to check present-day practices, especially in regard to maintenance.

Power Transmission Council, Inc., recommends the establishment of a central belting department with an experienced belting man in charge—a man who knows the characteristics of the various types of belts and particularly knows their proper care.

Analyze Your System

A short time spent in analyzing and studying transmission systems and methods will often reveal outdated practices that are limiting belt life and reducing efficiency. When these practices are found, they can be eliminated.

One of the most important factors in the proper maintenance of belting is its dressing or lubrication. Just any

Pittsburgh Fiber Glass textile yarns are produced in the world's newest fiber glass plant, employing the direct melt, continuous filament process. Our own quality checks are extremely favorable, showing a product which conforms to the highest standards, including a uniformity of fiber diameter that is so desirable for the manufacture of textiles.

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FIBER GLASS YARNS
will meet your most exacting tests

Customers have confirmed our findings. We invite you to put Pittsburgh Fiber Glass Yarns to your own tests and to obtain full information on our facilities for serving you. Pittsburgh Plate Glass Company, Fiber Glass Division, 420 Duquesne Way, Pittsburgh 22, Pa. District Sales Offices: Chicago, Cincinnati, Cleveland, Detroit, New York, Washington.

PACKAGED FOR ALL TEXTILE EQUIPMENT

Pittsburgh Fiber Glass textile yarns are made in various strand sizes, twisted and plied to give any desired build-up, and packaged to meet the requirements of all standard textile machinery.

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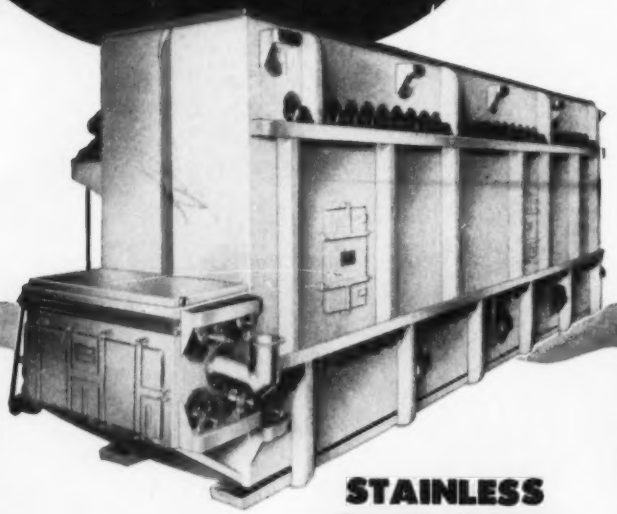

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The cost conscious textile man, concerned with the purchase and operation of production equipment, will find it to his advantage to contact Tower engineers. Tower engineers will consult with you on the design and installation of the finest in textile equipment — to meet your most exacting operational requirements.

NEW FLASH AGERS
for vat prints are now being offered by Tower. We will be pleased to explain their many advantages.

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old dressing will not do, and homemade dressings should be avoided.

The right dressing keeps a belt pliable so that it will grip the pulley firmly and yet not be sticky. When a belt sticks to a pulley, the constant tearing away from the pulley wastes power and, in addition, shortens the life of the belt. Sticky dressings also absorb dirt and necessitate frequent cleaning and scraping of both the belt and pulley.

Stop V-Belt Glazing

Of course, V-belts require no dressing, but an occasional wiping with commercial castor oil will prevent glazing.

Friction-surface rubber belting and balata belting will not absorb dressing of any kind. Occasional slight applications of castor oil to the pulley side of the belt will remove the "bloom" from rubber belts and remove glaze from balata belts.

All types of belting should be kept clean. Belts of leather and stitched canvas can be washed—under proper safety and ventilating conditions—with a mixture of gasoline and turpentine. Oil-soaked belts can be soaked in this mixture for several hours before they are cleaned.

Clean Belts With Soap and Water

In each case the belts should be scraped after they are cleaned. When they are dry, a proper dressing should be applied.

Rubber and balata belts can be washed effectively with soap and water, dried, and given slight applications of commercial castor oil.

Belt joints or fastenings give a lot of trouble; and since the trouble develops rapidly, they should be examined frequently.

Repair Loosened Splices

If the splice of an endless belt, such as leather, starts to loosen, it should be repaired immediately.

Joints, or fasteners, should be inspected carefully at appropriate intervals to make sure they are strong, are not strained or crooked, and pass around the pulleys smoothly.

Tension, too, is important in belting care and should be checked frequently. Correct tension insures maximum transmission of power with no undue strains to the belt or wear to the shaft bearings. When automatic tensioning devices are used, they should be checked to be sure they are not wearing excessively at any point.

Keeping records of belting performance, repairs, and life is also part of the duties of the central belting shop. Records of this type will assist in finding and eliminating weak spots.

For more information, write direct or use Reader Service post card.

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Many expert textile men are members of the permanent technical staff of Hubinger's famous laboratories. You are invited to consult these experts on any production problem involving the use of starch—without cost or obligation on your part.

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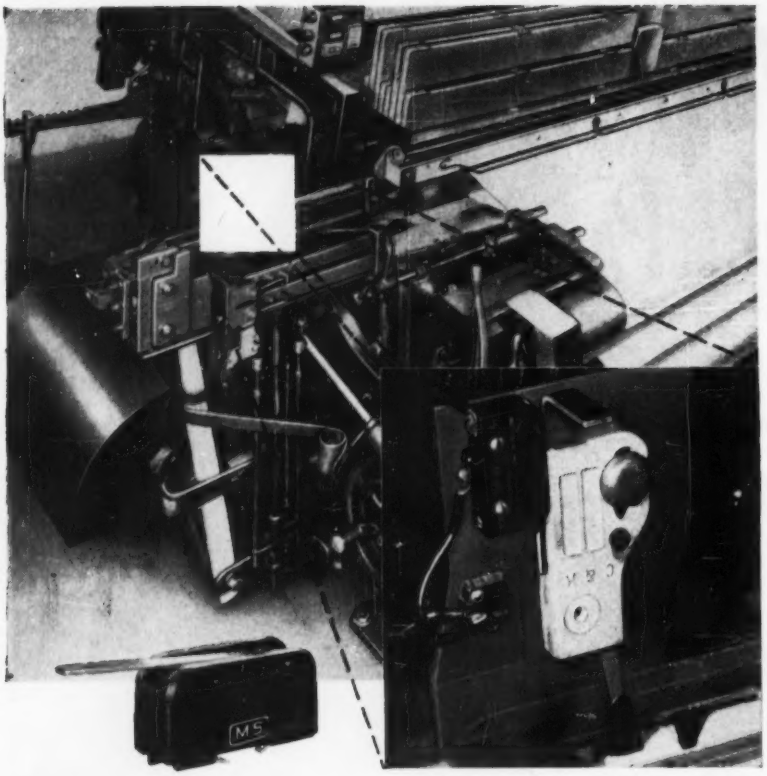

MICRO switch installed on feeler of Crompton & Knowles loom. Two other switches (not shown) control center stop motion.

MICRO

SWITCH INDICATES WHEN BOBBIN NEEDS REFILLING ON CROMPTON & KNOWLES LOOMS

Automatic warning of empty bobbins and control of the center stop motion on Crompton and Knowles looms is provided by MICRO precision switches.

They were selected because they met these requirements:

- **Rugged construction to withstand the constant to-and-fro movement of the lay (120 to 180 picks a minute)**
- **Rugged wiring terminals to allow heavy wire attachments. (#16 stranded or over)**
- **Light operating pressure to allow slipping feeler tip lever to indicate**
- **Sufficient overtravel to allow feeler tip lever to slip without injury to the switch**

When the shuttle enters the box, the bobbin contacts the feeler tip. If there is filling on the bobbin, the tip of the feeler will be pushed into the case. If there is no filling on the bobbin the feeler slides along the bobbin thereby causing the upper end of the feeler bar to press against the MICRO switch to signal the need for refilling the shuttle.

Both textile equipment designess and plant superintendents of textile mills are finding MICRO switches ideal components for safeties, limits and interlock to make textile machinery more automatic, safer and more productive. You are invited to contact your nearest MICRO branch office for consultation on specific switch applications.

MICRO A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

MAKERS OF PRECISION SWITCHES

FREEPORT, ILLINOIS

Useful Accessories For Textile Mills

▶ **To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.**

Truck Needs Less Space

A low-lift walkie truck with short headroom and a great increase in over-all power has been put on the market by Lewis-Shepard Products, Inc., Walnut St., Watertown, Mass. Capable of handling loads up to 6,000 lb., the Jacklift Electric is said to have twice the power in 48% less space and to be an ideal truck for handling operations where ramps must be navigated.

The increase in power is accomplished by a new, powerful, compound-wound GE traction motor that gives controlled speed on level floors and has extra power in reserve for ramps. The unit has two speeds forward and reverse. All controls are in the handle head.

The motor combines high capacity with compact physical design; it has a continuous rating of 1¼ hp. with overload capacity of more than twice this figure. (U-1)

Simplified Tank Controls

A new attempt to simplify the problem of liquid-level control has been announced by Johnson Corp., 800 Wood St., Three Rivers, Mich. The new tank controls reduce the task of controlling levels in tanks, vats, or other vessels to three standardized components: (1) an electrode holder, (2) a relay, and (3) a direct-operated solenoid valve.

Two stationary electrodes are suspended in the tank, where a circuit between them is established or broken by the rising or falling of the liquid level. This circuit actuates the relay, which, in turn, operates the solenoid valve. This valve may be installed in either the tank supply or discharge line, whichever operating conditions require for proper level control.

Components are available in several sizes. (U-2)

Magnifying Spectacles

Careful inspection that requires magnification, or close tolerance work that ordinarily strains the eyes are aided by magnifying spectacles that are available from Armco Mercantile Co., 221 N. La Salle St., Chicago 1, Ill. Wearing of the spectacles leaves both hands free.

Employing the same optical system as a pair of binoculars or a telescope, the spectacles afford 2X magnification with excep-

Vicara®
ZEIN FIBER

compared to other soft luxury fibers

DRY MECHANICAL PROPERTIES		Vicara	80's Wool	Vicuna	Cashmere
Denier of Fiber Tested		2.4	2.5	1.9	2.9
Tensile Strength g/den		1.20	1.17	1.09	1.43
% Ultimate Elongation		37	38	34	34
% Length Recovery from Stretch	5% stretch	67	65	66	70
	20% stretch	31	35	34	37
% Work Recovery	5% stretch	44	47	46	51
	20% stretch	17	17	15	18
Work to Stretch 10^6 ergs/cm^3	5% stretch	24	23	24	20
	20% stretch	136	145	143	157
Young's Modulus g/den/per cent		.24	.25	.27	.33
Compliance Ratio den/gm		1.5	1.3	1.2	1.0

These data show a striking similarity in the characteristics of these four soft luxury fibers. The chief difference, not shown in the table above, is the difference in price. The base price of *Vicara* is only $1 per pound!

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DYEABILITY • WARMTH • HANDLE, FEEL AND DRAPE • ELASTICITY • RESILIENCE
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NO ODOR • NO KNOWN ALLERGIES • MOTH RESISTANCE • MILDEW RESISTANCE

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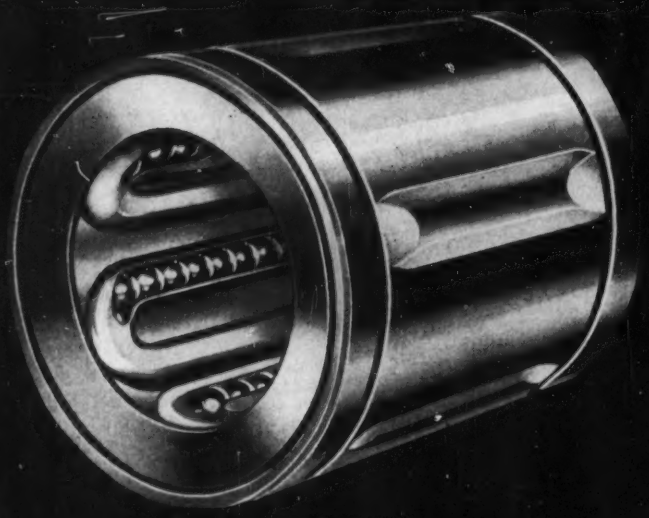
BALL BUSHING



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LINEAR MOTIONS

Sliding, linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS!

Now manufactured for 1/4", 1/2", 3/4", 1", 1 1/2" and 2 1/2" shaft diameters.

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Progressive Manufacturers Use Ball Bushings —A Major Improvement at a Minor Cost

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Write for descriptive literature and the name of our representative in your city.

Also manufacturers of NYLINED Bearings — DuPont NYLON within a metal sleeve—for rotation and reciprocation.

tional clarity and an unusually large field. An area as large as a magazine page can be viewed at once to permit fast, accurate inspection or close-tolerance assembly. The viewing field is observed at a normal reading distance instead of requiring hunching up over a restricted area.

Imported from France, the telescopic loupe glasses weigh hardly more than ordinary spectacles and can be folded down and carried in their case. They can be comfortably worn over regular glasses. They cost $22.50 direct. A model in which prescription lenses can be inserted sells for $25. (U-3)

Centrifugal Feed Pumps

Five-, six-, and seven-stage centrifugal feed pumps with capacities up to 1300 gpm. and heads of 1200 psig.—2½, 3, 4, and 5 in. in size—have been made available from Pennsylvania Pump & Compressor Co., Bushkill Drive, Easton, Pa.

The first stage impeller is of the double-suction type. This design enables the pump to handle hot water with lower net positive suction head.

Stuffing boxes at both ends are subjected to low pressures. At one end the box is subject to suction pressure only, at the other end to first-stage pressure only. (U-4)

Varied Instrument Charts

The expansion of its engineering and production facilities for printing recorder charts for instruments has been announced by The Bristol Co., 68 Bride St., Waterbury 20, Conn. Circular charts up to 18 in. in diameter and strip charts up to 29⅝ in. wide can now be produced to specifications for all types of special instruments, research instruments, computers, etc.

Specially developed equipment makes it possible to produce charts printed on a great many different kinds of paper. Special papers, such as wax-coated, heat-sensitive, chemically coated, smoke-covered, and electrically sensitive papers, can be handled. (U-5)

Remote Signal Units

A new adapter unit, which permits remotely located visual trouble signals to operate as part of a common plant-wide audio-visual annunciator system, has been announced by Panalarm Products, Inc., 6312 N. Broadway, Chicago 40, Ill.

For the remote visual signals, either individual, back-lighted, illuminated nameplate units or bullseye lamps are furnished. They may be used for scattered locations on panelboards or operating locations in the plant. Bullseye lamps may also be used with separate On-Off lights to form a three-light control station.

All signals connect to a common horn or bell that must be acknowledged by the operator when an off-normal condition develops. Moving parts and contacts are enclosed in hermetically sealed plug-in units that are corrosionproof and suitable for Class-I, Div.-2 locations. (U-6)

Small-Parts Storage Cabinet

Equipto Div., Aurora Equipment Co., 422 Cleveland Ave., Aurora, Ill., has introduced the Little-Gem steel storage cabi-

"Charlie—what do you suppose happens to boys who don't use **Swift's Soaps?"**

Our customers tell us that Swift's Soaps save time and money in textile operations. There are many good reasons why you, too, will find the right soap in Swift's complete line.

Swift's Soaps have excellent physical form . . . proper uniformity of composition.

Swift's Soaps perform outstandingly in dyeing, fulling, scouring and other specialized operations.

Swift's Soap line is complete . . . there's a *right* soap product for every textile need.

Swift's Soaps are backed by our years of specialized experience and research. We're ready to put all our resources to work to help solve particular soap problems.

Swift's Soaps are sold from coast to coast with distribution points strategically located to assure prompt delivery of these and other fine Swift's Soaps!

Vertex Flakes • 557 Flakes • White Ribbon Chips • Wool Flakes

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SWIFT & COMPANY
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Helps reduce neps... NEW EMERY GRINDING FILLET by CARBORUNDUM TRADE MARK

Emery Grinding Fillet by CARBORUNDUM gives your card clothing true side grinding with no chiselled points or burrs—helps keep neps to a minimum.

On traverse or drum grinders, Emery Fillet by CARBORUNDUM reconditions clothing evenly, dependably. Smooth edges eliminate gaps when spiral winding. Every particle of fine Turkish emery grain is securely anchored to the tough, flexible cotton backing—there's no shedding of the coating.

Specify Emery Grinding Fillet by CARBORUNDUM—the standard of leading mills everywhere. Order today from your CARBORUNDUM Distributor. He carries complete stocks for immediate delivery.

"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company, Niagara Falls, New York

EC-16

Call your nearby distributor FOR CARBORUNDUM's TEXALOX and FILLET CLOTH

ANDERSON, S. C.	Sullivan Hardware Co., Inc.
BIRMINGHAM, ALA.	Moore-Handley Hardware Co.
GASTONIA, N. C.	Gastonia Mill Supply Co.
GREENSBORO, N. C.	Smith-Courtney Company
GREENVILLE, S. C.	Carolina Supply Co.
HICKORY, N. C.	Smith-Courtney Company
NEW BEDFORD, MASS.	Roy Noble
ROME, GA.	Battey Machinery Co.
SHELBY, N. C.	Shelby Supply Co.
SPARTANBURG, S. C.	Montgomery & Crawford Co., Inc.
WORCESTER, MASS.	Lindco

net, said to provide quicker access to a wider variety of tiny parts than anything yet conceived. The cabinet is designed for use either individually, in stacks, under counters, or on shelving.

The drawer of the cabinet measures 11x11x1¼ in. It has up to 28 adjustable compartments enclosed on all four sides and bottom. As a result, tiny parts can't slip out, become damaged, or jam the drawer.

The front of the compartments is curved for easy withdrawal of parts, while overhang at the rear prevents shuffling of items when the drawer is jerked open or slammed shut. A label holder identifies each compartment. (U-7)

Protective Hand Ointment

Rough, chapped, irritated skin caused by frequent exposure to water and other substances can be effectively prevented by use of new Silicote skin-protective ointment, which has been introduced by Arnar-Stone Laboratories, Inc., 1316 Sherman Ave., Evanston, Ill., and is available in 1-oz. tubes and 1-lb. jars.

The new ointment repels water and moisture in a dramatic manner and at the same time allows normal skin respiration. It can be used either before exposure to prevent irritation or afterwards to facilitate healing.

Silicones repel moisture and are inert, adhesive, nontoxic, and nonsensitizing. (U-8)

Carton-Banding Conveyor

A new Banding-Helper conveyor that features easy passage of banding tape through an underpass and up a vertical deflector channel via a channeled midrib to receive the lengthwise band from a separate roll placed under the conveyor is available from Metzgar Co., 455 Douglas St. N. W., Grand Rapids 4, Mich.

The unit is available for any standard conveyor widths or can be made with length and width to suit a mill's maximum container size. (U-9)

Rubber-Base Coating

A new chemical and corrosion-resistant rubber-base coating, called Pliogard, which provides a durable and lasting finish for floors, walls, structural steel, tanks, ducts, and process equipment, has been developed by Saran Protective Coatings Co., 2415 Burdette Ave., Ferndale (Detroit) 20, Mich. The coating is formulated with a heat-stable thermoplastic resin obtained by the copolymerization of styrene and butadiene.

Films are produced that are exceptionally tough, hard, and inert to most chemicals. They have excellent adhesion to all clean, dry surfaces and give good results with minimum surface preparation. No primer is needed. Two coats provide excellent protection against fumes, vapors, and occasional spillage of acids and alkalis.

The coating is extremely heat resistant. Temperatures up to 250° F. continuous, and even higher for short periods of time, can readily be accommodated. The coating can be applied over old painted surfaces if the surface is clean and the old coating firmly adherent. The coating is

VERY OFTEN THE DIFFERENCE BETWEEN THIS . . .

AND THIS . . . IS THE NAME CELANESE* CELAPERM*

The virtues of Celaperm are established. The range of colors in this pigmented acetate yarn has an all-around fastness unexcelled by any other fiber. For neither washing nor dry cleaning dim the beauty of Celaperm colors. They are safe in sea water and immune to gas. They do not crock. They even resist sun-fading. And they open wide the door to new fabric styling.

But most important—when you work with Celaperm yarn, you sell the Celanese name.

To America's millions, Celanese is synonymous with textile leadership. It spells fabric quality. It means "your money's worth." It can make the sale.

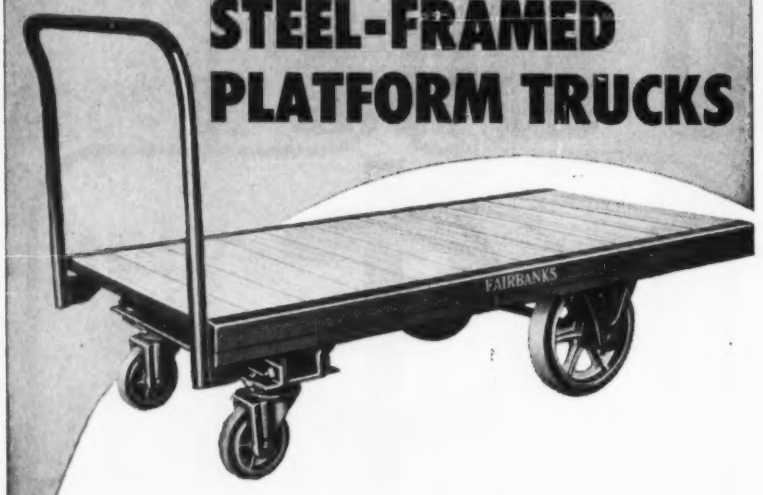
To help make sure of that sale, Celanese supports you with nationwide advertising keyed to individual retail promotions—campaigns designed to drive home our Celaperm name and move home your Celaperm goods. Doesn't it make better sense (and better business) to sell with Celanese rather than to go it alone? Link your name with Celanese—and Celaperm—now. Call MU 9-6000.

*Reg. U. S. Pat. Off.

CELAPERM* THE *Celanese**

ACETATE YARN WITH THE "SEALED-IN" COLOR

TAKE THE LOAD OFF YOUR MIND
with Fairbanks®
STEEL-FRAMED
PLATFORM TRUCKS



Load 'em high...treat 'em rough...Fairbanks steel-framed trucks always come back for more. Tough select oak platform, bolted to a sturdy steel frame, mounted on famous smooth-running Fairbanks swivel casters...give you low cost service, mile after mile, year after year.

Series 21 **LOCK-WELD SWIVEL CASTERS** eliminate the greatest cause of caster failure: the king pin.

Fairbanks Steel-framed **HAND TRUCKS**...a type for every purpose...in every industry.

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VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

nonoxidizing and nonsaponifiable. Fourteen colors are available. (U-10)

New Antirust Paints

Three new colors in its line of Rustrem antirust paints is announced by Speco, Inc., 7308 Associate Ave., Cleveland, Ohio. Now available in red, gray, and green in addition to standard black, aluminum, and clear, the Rustrem colors are made to stop rust completely in one application.

For use on all metals, both indoors and out, the colors eliminate the necessity for a clear base coat except where other paints are desired as finish coats. As with standard company colors, they can be applied right over rust without wire brushing, scraping, or sandblasting.

They are said to penetrate rust layers and adhere tightly to surfaces beneath even when applied to a wet surface. They form a tight seal that resists moisture, temperature changes, chemicals, acids, and fumes. (U-11)

Smaller-Model Continuous Mixer

The Marco Co., Inc., Third and Church St., Wilmington, Del., has recently introduced in its line of continuous mixers a new Model-RF 7½-in. rotofeed continuous Flow-Master mixer for semi-works and laboratory use.

It is claimed that any semi-works or laboratory results obtained can be duplicated with the commercial-size Flow-Master continuous mixers.

The new smaller-model mixer is designed for use by processors who need to put together two or more fluid or dry substances. (U-12)

Ash Cart on Wheels

A Rol-a-Way ash cart designed to receive ashes direct from the average 20-in.-high grate line of boilers is available from American Coal Burner Co., 18-V E. Erie St., Chicago 11, Ill. Made from heavy steel for general industrial application, the cart eliminates pulling the ashes onto the floor and then shoveling them into a container.

Capacity is over 5 cu. ft. A handle folds down for easy cart access to the fire door. Large wheels are provided for safe handling over rough floors.

The unit can double as a general-purpose carry-all or parts container. (U-13)

Plastic-Film Tester

A low-temperature impact tester for vinyl-plastic film is being manufactured for industry by United States Testing Co., Park Ave., Hoboken, N. J. The instrument is required for the testing of low-temperature impact in the recommended commercial standard for general-purpose vinyl-plastic film, TS-5165.

Its use is also required in the standard test methods of the Plastic Coated and Film Association.

The new tester has been designed for improved appearance and durability. It includes a mechanical release fixture to assure uniform results when it is used by different operators. (U-14)

Versatile Impact Tool

An electric impact tool has been put on the market that provides a fast way to run and remove up to ⅜ in. bolts. It is an

"Service is very important to me... that's why I call SOLVAY *FIRST* for these Textile Chemicals

REG. U. S. PAT. OFF.

OF COURSE, I CAN'T keep my production going without textile processing chemicals. But I have found that service—the right kind of service—is an important factor to consider when I buy these chemicals.

A GOOD EXAMPLE of this is Technical Service. I have found from experience that Solvay's *exclusive textile* Technical Service is really tops in the field. These textile specialists can tackle a problem and come up with valuable advice and suggestions on how to overcome that problem. They really work with you . . . it's almost like having a staff of textile experts working for you.

THEN THERE'S Solvay's efficient delivery service—prompt and on-time, as you need it.

And because service is so very important to me, I always call *Solvay first* for these textile chemicals."

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POTASSIUM CARBONATE
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Soda Ash • Caustic Soda • Potassium Carbonate • Calcium Chloride • Chlorine • Caustic Potash • Cleaning Compounds • Ammonium Bicarbonate
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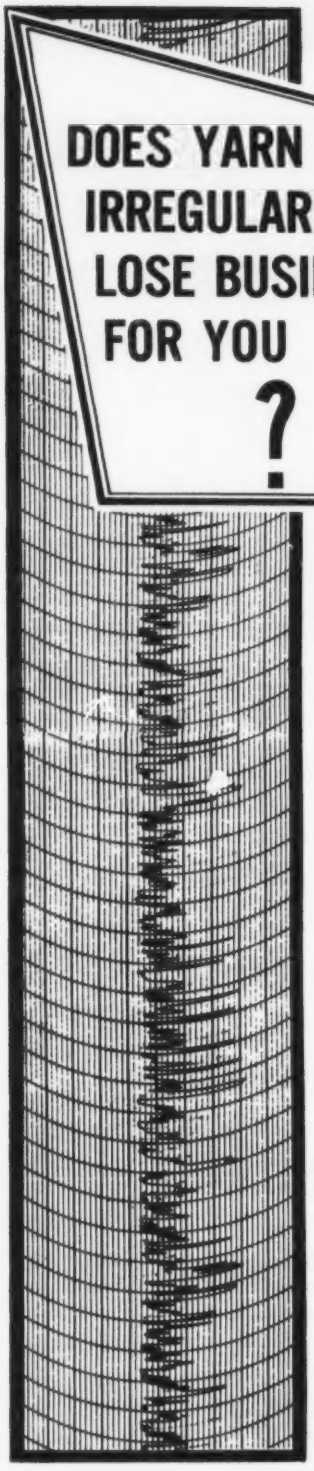
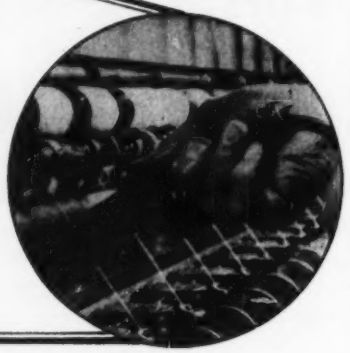


DOES YARN IRREGULARITY LOSE BUSINESS FOR YOU ?

Fielden Yarn Evenness Recorder measures yarn irregularity.



The new Fielden Yarn Evenness Recorder and Integrator will help you eliminate poor yarns; yarns that cause excessive ends down at the loom; yarns that make up into cloth with a matte surface, that cause barred effects or a scratchy appearance.

This new Fielden Yarn Evenness Recorder and Integrator is the last word in electronic design. It is as easy to operate as a TV set. It is controlled with a single knob. Once in balance it remains in balance. Because of its simplicity ordinary spinning and picker room help can operate it.

You don't need a costly technical laboratory to help you eliminate avoidable yarn irregularity.

Fielden's *new* Yarn Evenness Recorder and Integrator is the *latest* and *simplest* laboratory to do this. With it you can trace the cause of yarn irregularities from the heaviest slivers to the finest yarn filaments. This instrument can be your laboratory to measure yarn regularity at any stage in the process.

A capacity or dielectric principle using the Fielden Bridge System is the heart of the instrument. Specially designed temperature compensated condenser heads provide the perfectly parallel electric field essential for accuracy. Day long stability and freedom from drift are assured. Integration of mean level and mean deviation is inbuilt.

Write today for full facts of these and other unusual features of Fielden Yarn Regularity Recorders.

Fielden INSTRUMENT DIVISION

ROBERTSHAW-FULTON CONTROLS CO.
2920 North 4th Street • Philadelphia, Pa.

excellent tapping and threading medium and can also be used for ordinary drilling, reaming, screwdriving or drawing, hole sawing, wire brushing, masonry drilling, and wood boring. Syntron Co., 400 Lexington Ave., Homer City, Pa., is the manufacturer.

The motor runs continuously under all conditions and cannot be burned out. The instant the torque load on the drive spindle builds up to a certain point, the rotary action is changed through the impact mechanism into 2,000 sharp, powerful blows per minute.

The normal, clockwise rotation can easily be changed by turning the rear end cap.

The new impact tool weighs only 6¾ lb. and has a Universal a.c.-d.c. motor for 115-v. operation. A variety of accessories —sockets, bits and chuck adapters—are available. (U-15)

Working-Height Lifter

A working-height lifter that fits right into a materials-handling system has been developed for textile-mill use by Lewis-Shepard Products, Inc., Walnut St., Watertown, Mass. Full loads, whether on platforms or floor trucks, can be deposited onto it at floor level. Electro-hydraulic power raises the work pile under remote control in the form of foot-operated switches; so the operator's hands are left free.

Touching the Up pedal starts the platform up; touching it again stops the motion. Pressing the Down pedal starts the platform down but continues the motion only so long as the pressure is applied. Locking-type lifting and deadman lowering controls permit accurate inching in either direction.

The lifting truck can be made in any practical size and in capacities up to 4,000 lb. While they are usually used at one point, they are portable and can be moved as desired. They do not have to be sunk into the floor. Floor space required is only 8 in. larger than the load itself. (U-16)

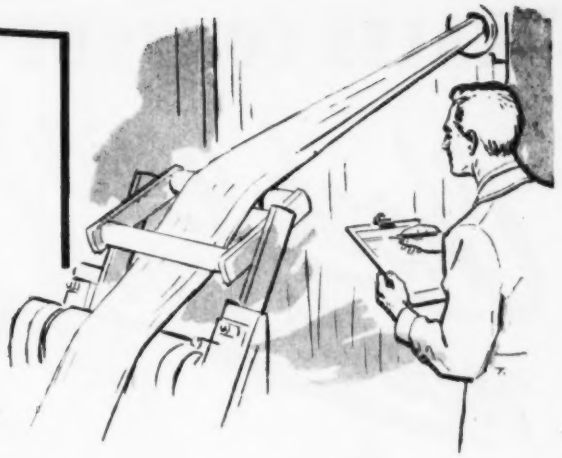
Nylon Throwing

(*Continued from page 98*)

For each size system, the size formula, tint, viscosity, titration, total solids, and feed-batch number are listed. If the titrations for a particular machine are outside the specification limits, the other machines on the feed system involved and the feed system can be crosschecked on the report to see if the feed system is at fault. If the feed system looks all right, the proper adjustment is made to the machine, and the troughs are rechecked. Machine changes are noted in a space for remarks, and the recheck titration is listed with a red pencil.

The laboratory is located in the plant close by the machines. Margaret Washburn, the laboratory technician, can do any job in the throwing plant and occasionally helps out on the line

GET A BETTER PICTURE OF YOUR PEROXIDE BLEACHING OPERATIONS



Du Pont Bleachery Survey Pinpoints Production Problems ...Can Help Lower Your Costs

Production up 22½%! Water consumption down 48%! These are typical gains resulting from recent surveys by Du Pont specialists. This service may be able to help your mill reach or maintain peak efficiency.

Du Pont Bleachery Surveys are conducted by men with wide experience in all phases of textile bleaching. Without interrupting production, they spend from one to three days surveying a plant. Fuel, water and chemical consumption are studied . . . cloth production checked...quality of finished goods examined.

During their study, the Du Pont specialists take samples of cloth at each stage of the bleaching process. These samples, together with the necessary data, are sent to a Du Pont laboratory for complete analysis. Reports prepared by specialists are next reviewed by top experts and then forwarded to the mills. Included are recommendations for reducing costs and improving the product.

This valuable Du Pont service is offered without charge to all users of peroxide in the United States. Whether or not a survey is required, your mill's technical staff is invited to discuss bleaching problems at any time with Du Pont specialists.

DU PONT PEROXIDES

FOR TEXTILE BLEACHING

Available in drums and tank cars { **"Albone" 35 . . . Hydrogen Peroxide, 35%** / **"Albone" 50 . . . Hydrogen Peroxide, 50%**

DU PONT

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

SEND COUPON FOR DETAILS

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about the free Du Pont Bleachery Survey. I am bleaching ☐ cotton ☐ wool ☐ man-made fibers.

*Name*_____ *Title*_____

*Firm*_____

*Street & No.*_____

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Production-wise and cost-wise . . it makes good cost sense to be sure you have enough scales—and the right scales—throughout your plant today!

A scale survey by your nearby Toledo office will supply this information for you—without obligation. It will point out *proven ways* to solve your problems in weighing, checking, testing, counting, batching, force-measuring and other operations . . . with a modern Toledo! Learn how Printweigh can stop the losses that occur through human errors. It will pay you to get in touch with your Toledo office—in the phone book in 200 cities. Or write for bulletin 2020, a condensed catalog of modern Toledos. Toledo Scale Company, Toledo 1, Ohio.

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Factory-Trained
200 Cities

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HEADQUARTERS FOR SCALES

when an operator is out. A two-way communications hook-up between the laboratory and Robert Leh's office keeps Mr. Leh in constant touch with the laboratory.

Final Inspection Covers All Cones

Every cone of yarn is examined for defects, identification, soiling, and density. The cones are wrapped and packed by specification, and the proper identification slip is put in. Then they are hauled to the roller conveyor that passes through a swinging wall panel into the shipping department.

Cotton-Finishing Formulas

(*Continued from page 99*)

Choice of Materials Is One Problem

Additive finishing materials of a nondurable nature are innumerable. The finisher's task is complicated by the fact that he has a choice of such a wide variety of materials, many of which are essentially the same chemically and certainly perform the same functions. These products are sold under a variety of trade names. The finisher may not know the chemical nature of the material he is using, which further complicates his problems.

Stiffening or bodying agents offered the finisher are usually of a cellulosic nature in the form of thick-boiling starches, thin-boiling starches, dextrines, and chemically modified starches. In addition, the finisher may use certain synthetic resins such as the acrylic types, ethyl and methyl cellulose, polyvinyl acetate, and others. These products are made in a variety of forms and modifications.

Softening agents are many and varied. Sulfonated oils and fats, sulfated fatty alcohols, sulfated fatty esters, sulfonated mineral oils, and emulsified waxes and oils constitute the majority of the softeners generally used.

Wetting agents are diverse and have varied effects. Cotton fabrics that are to be compressively shrunk very often need the addition of a rewetting agent so that the goods may wet out evenly and uniformly on the compressive-shrinkage machine. We will not attempt to list the many types of rewetters on the market. Most of them are synthetic materials.

Weighting agents are often used to finish a fabric to a special weight, and for this purpose the finisher must add various quantities of such agents. He may use highly soluble dextrines, sugars, inorganic salts (such as mag-

what's **corn** doing breaking thru the sound barrier?

CORN PERFORMS VITAL FUNCTIONS... IN MANY UNEXPECTED PLACES

The aluminum alloy in the fuselage of a supersonic jet . . . and the steel-molybdenum in its armor . . . use a derivative of corn in their manufacture. Specialized corn starches are used in refining and extracting these metals from their ores. This is but one of the numerous examples of how basic research in corn helps American industry . . . helps you.

CORN PRODUCTS IN TEXTILES

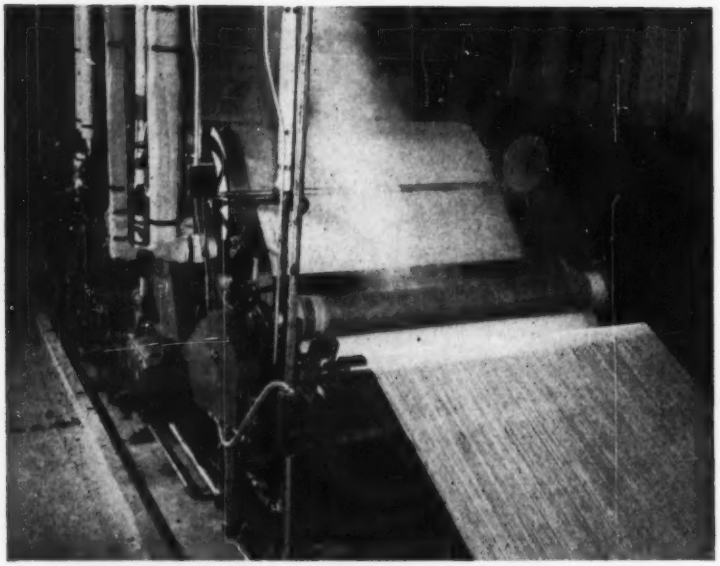
For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins . . . recommended ingredients for many textile processes.

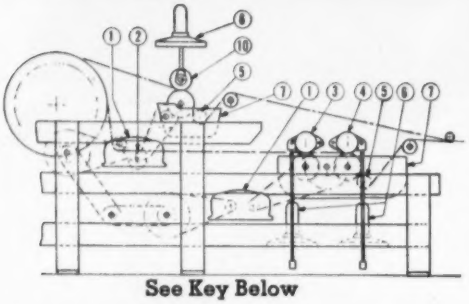
We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
GLOBE®
brand dextrins, gums
GLOBE®
brand starch
EAGLE®
brand corn starch

CORN PRODUCTS REFINING COMPANY, 17 Battery Place, New York 4, N. Y.

DOUBLE QUETSCH
Makes possible sizing of Combination Warps





See Key Below

To be able to produce modern cloth at competitive prices you need modern equipment.

Leading mills, weaving fabrics that combine two or more natural and synthetic yarns, are installing

JOHNSON WARP SIZERS
WITH COMBINATION QUETSCHES

They thus are able to size warps that contain mixed yarns in a single operation, saving time and improving the quality of their cloth. Above is a typical use of a double quetsch.

Key to Diagram

1 Positive variable speed unit to regulate stretch between quetsch and cylinders.
2 Cut marker.
3 & 4 Four roll double quetsch.
5 Adjustable immersion roll.
6 Air motors for pneumatic loading of quetsch pressures.
7 Large stainless steel direct steam heated solution pan.
10 Two roll single quetsch.

Charles B. Johnson

MACHINE WORKS

PATERSON NEW JERSEY

nesium sulfate, sodium sulfate, or phosphate), colloidal clays, and urea.

Fillers are used on a considerable yardage of cotton fabrics. These fabrics are usually of low-count constructions, and the object is to close up the goods and give them a more solid appearance. For this purpose, a finisher may use such materials as talc, china clay, calcium carbonate, or calcium sulfate in combination with binders and softeners.

Think Out Your Problem— Then Simplify It

The finisher should view the finishing of cotton goods objectively and clearly think out certain basic approaches. He should look at finishing as the addition of (1) a material to stiffen the fabric or soften the fabric, plus (2) a rewetting agent (if the goods are to be shrunk). The problem then is not as complicated as it would otherwise appear.

All the finisher would need to do in the case of pure finishes would be to select one stiffening agent, one softening agent, and one rewetting agent; and by using these three materials, either alone or in combination with each other, he could produce a wide variety of finishes. If weighting is desired, one other ingredient should be added to this list. Thus, the finisher could theoretically get along with only four materials.

Unfortunately, in practice, there are very few finishers who do their finishing with four materials. The average finishing plant is more likely to have 10 or 12 finishing agents on inventory. In some cases their use is justified; yet many of the items may be duplicates or similar products. Which one is used would make little difference in the end result.

A stiffening agent that may be satisfactory on a bleached white may not be satisfactory on a heavy dyed shade, because of undue shade change, marking or scratching of the finish, or for other reasons. A softener that works satisfactorily on goods not slated to be shrunk, might not do so well on goods to be shrunk because of objectional water-resistant properties imparted to the cloth. Again, a softening agent that softens satisfactorily on dyed goods may not be satisfactory on whites because of discoloration when the goods are subjected to high temperatures.

Put Your Lab on the Problem

The finisher can obtain a great deal of help from his technical laboratory in selecting materials that will satisfy his requirements and at the same time provide good money value. An indi-

"Call Celanese for ACETIC ACID"

- **Overnight delivery by tank truck**
- **Highest quality U.S.P.**
- **Volume supply**
- **Multiple-plant production**

For textile manufacturers in the southeast, Celanese now offers a new delivery service:

Tank trucks, fitted with water-metering equipment deliver acetic acid 100% to your plant. Drawing on your water supply this equipment pumps an acetic acid concentration meeting your specifications into your storage tanks . . . cutting freight and processing costs.

Call Celanese Chemical Division, Charlotte office (Charlotte 6-9689) or write:

Celanese Corporation of America
Chemical Division, Dept. 571-F,
180 Madison Avenue, New York 16, N. Y.

Celanese® CHEMICALS

*Reg. U. S. Pat. Off.

Save Valuable Man-Hours with

DARNELL
Casters & Wheels

These durable, precision-built Casters assure the easy handling of heavy loads. Savings in floor and equipment wear soon pay for their cost. Ask your supplies dealer about Darnell products.

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

Free Manual

vidual material may not be needed for each specific finish; and by eliminating as many special materials for special uses as possible, the finisher eliminates many complications.

An example of approaching the problem intelligently is as follows:

A finisher was running a line of dark shades and realized that his stiffening or bodying agent would be apt to change the shade and stay on the surface. He chose for his stiffening material a medium-soluble dextrine. Such dextrines, pound for pound, do not have the bodying properties of thin-boiling starches and similar products and are somewhat more expensive. In this case, he was using some 200 lb. of the dextrine per mix. It was suggested that a thin-boiling starch be used to replace the dextrine, and it was found that approximately 50 lb. of this starch could be used to give the same hand and body as the 200 lb. of dextrine.

The finisher raised the objection that the thin-boiling starch would not penetrate these dyed fabrics and would radically change the shade because the starch would stay on the surface. It was found, through trial, that the 50 lb. of thin-boiling starch did not alter the shade any more than the 200 lb. of dextrine, and there was a considerable saving in the cost of the finish.

The fallacy in the finisher's reasoning was that he was thinking in terms of equal quantities, and in this respect he was entirely correct. If he had been using 200 lb. of the thin-boiling starch, he would have obtained a greater shade change (because of lack of penetration) than with 200 lb. of the high-soluble dextrine. When he used only 50 lb. of the thin-boiling starch, the effect on the shade was not as great as with 200 lb. of the dextrine.

Georgi's TOE

(*Continued from page 137*)

Changed break draft
Installed proper-size trumpets
Cleaned steel rolls

Mill E-1 approached the problem of sliver uniformity in drawing by starting in the opening room. Blending and mixing were improved, pickerlap uniformity was checked, and all cards were gone over carefully.

Mill F, in a similar approach, made picker-room changes and also adopted the practice of stopping the card when the lap runs out. The old lap is backed out, and then the new one is fed. There's more waste this way, but sliver uniformity has been improved.

G-38 Top Cones

Four mills reported on the G-38

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FALL RIVER, MASS.

top cone, and three of the four gave unqualified approval of this type of cone for roving frames. Bobbins are said to be more uniform, and tension gears are changed less frequently. Mill T is using G-38 cones on 8x4 and 10x5 frames making 1.25- to 4.65-hk. roving with front-roll speeds of 175 to 201 rpm.

Mill P stated that this type of cone does a good job on 0.75-hk. roving but a two-ring cone does a better job on 1.40-hk. roving.

Card-Room Testing Equipment

The following equipment is being used in Georgia card rooms:

Shirley analyzer
Fibrograph
Saco-Lowell lap tester
Grain scale
Evenness tester
Nep-counting equipment
Reel
Saco-Lowell sliver tester
Belger roving tester
Direct-reading grain scale

Best Combed-Yarn Organization

Here are the recommendations of five mills for the best organization for producing combed yarn:

Mill A

Opening: six F-7 feeders, a No. 11 condenser and a No. 12 lattice opener, two Superior cleaners, and a Centrif-Air machine. Production: 1,000 lb. per hr.

Picking: One-process picker with a three-blade beater on the breaker section and a Kirschner beater on the finisher section; 15-oz., 46-lb. lap with a coefficient of variation of 1.35.

Carding: Producing 5.5 lb. per hr. of a 50-gr. sliver at 14% variation.

Breaker drawing: Four-cushion-roll frames produce 40-gr. sliver at 125 ft. per min. Sliver variation is 26%, and trumpet size is 0.115 in. Roll settings from front to back are 1¼ in., 1⅜ in., and 2 in. Corresponding drafts are 2.54, 2.92, and 1.25.

Combing: Saco-Lowell combers take an 800-gr. lap and produce at 42 lb. per hr. with 28% variation and 13% noils.

Finisher drawing: Four-cushion-roll frames produce 55-gr. sliver at 19% variation.

Mill J.

Opening: (1 3/32-in. Egyptian cotton) Bale breaker, Superior cleaner, and a Centrif-Air machine put out 377 lb. per hr.

Picking: A single-process picker with a blending reserve has porcupine, Buckley, three-blade, and Kirschner beaters. The 42-lb. lap has a ± 1.2% weight variation at 13.5 oz. per yd.

Carding: Production is 3.96 lb. per

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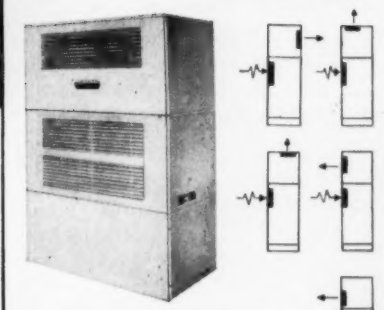

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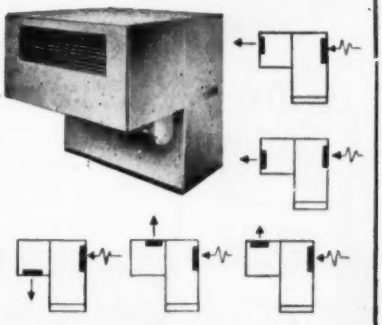

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better detergency—
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hr. for a 45-gr. sliver at a variation of 11%.

Breaker drawing: Conventional four-roll frames make a 35-gr. sliver at 139 ft. per min. with 25% variation. Roll settings from front to back are $1\frac{9}{16}$, $1\frac{1}{2}$, and $1\frac{13}{16}$ in. Corresponding drafts are 3.68, 1.29, and 2.22. Trumpet size is 0.140 in. A sliver lapper makes a 60-gr. lap with a drum speed of 26.5 rpm.

Combing: Nasmith combs produce at 13.2 lb. per hr. with 20 to 25% sliver variation and 18 to 20% noils.

Finisher drawing: Two more processes of three-over-four Saco-Lowell drawing produce a 48-gr. sliver with 14% and 10% variations respectively.

Mill P.

Opening: Saco-Lowell F-5 feeders, a bale breaker, a No. 12 lattice opener, and Centrif-Air machines in tandem deliver 1,000 lb. per hr.

Picking: Kitson pickers make a 13.75-oz. lap with 3.5% variation. There is a two-blade beater at the back and a Kirschner beater at the front.

Carding: A 50-gr. sliver is made at 5.25 lb. per hr. with 10% variation.

Breaker drawing: Four-cushion-roll frames deliver a 42-gr. sliver at 120 ft. per min. Rolls from front to back are set at the staple length plus $\frac{7}{16}$, $\frac{7}{16}$, and $\frac{13}{16}$ in. Corresponding drafts are 4.6, 1.62, and 1.28. Sliver variation is 21%, and trumpet size 0.120 in.

Combing: Saco-Lowell combers take an 807-gr. lap and produce at 45 to 50 lb. per hr.

Finisher drawing: Four-cushion-roll frames make a 50-gr. sliver with 50% average variation.

Mill EE

Opening: Saco-Lowell feeders, preopeners, an Aldrich beater, a Super-Jet cleaner, and a Superior cleaner are followed by an opener, two condensers, a Centrif-Air machine, and two cleaning trunks.

Picking: Kirschner beaters are on at the delivery end of one-process pickers that make a 43-lb. lap with ± 1 lb. tolerance.

Carding: Production is 3.5 lb. per hr. A 50-gr. sliver is made, with 12% average variation.

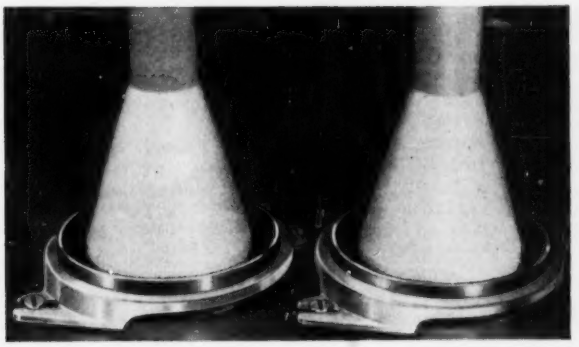
Breaker drawing: H&B frames produce a 65-gr. sliver. Front-roll speed is 320 rpm., and the settings from front to back are $1\frac{7}{8}$, $1\frac{1}{4}$, and $1\frac{3}{8}$ in. for $1\frac{13}{16}$-in. stock. Corresponding drafts are 2.74, 1.10, and 1.79. Variation is 20%.

Combing: Lap weight is 590 gr., and the NASM Hetherington combers produce 440 lb. per spindle per 40 hr. Sliver variation is 25%, and noils are 20%.

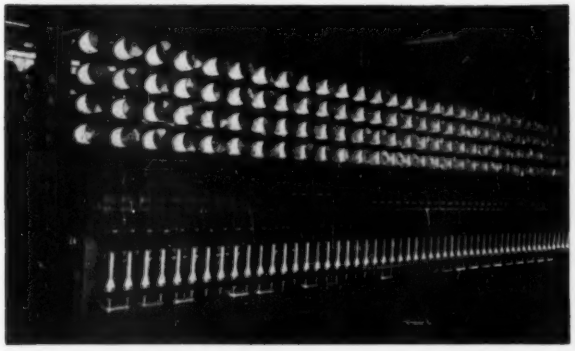
Finisher drawing: H&B frames

How BOGER & CRAWFORD increased bobbin capacity 82% with HERR twister rings!

OLD RINGS — Before new rings were installed the frames were equipped with 2⅛" flange rings of the conventional type. Maximum conventional-ring size would have been 2¼ inches.



NEW RINGS — Twisters now have 2¾ inch Herr Conical Rings and Holders ¼ inch larger than the largest size of conventional ring that could have been used because the new rings fit on the rail and not in it.



THIS BOGER & CRAWFORD TWISTER at Lincolnton, N.C., puts 8,760 yards of 40/2 yarn on a bobbin, instead of 4,800 yards as before. The only change made was in the type of ring and size. Now, knots are reduced in sales cones because fewer bobbins are needed to fill each cone.

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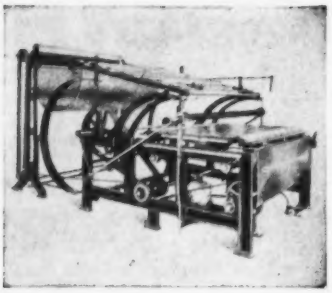

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- All types of our Folding Machines now have Ball Bearings; they make an easier running machine, need less maintenance, and permit reduced tension on the table springs.
- Illustrated is a Cloth Folding Machine for yard folds, with No. 4 Top, Lewis Pneumatic Table Lift, and Motor Drive.
- Cloth Folding Machines are commonly made for one yard folds only. They can be made, however, for one meter folds, or 1¼ yard folds, or 1½ yard folds. Adjustable Folding Machines are also built to make two or more different lengths of folds.
- We also make Air Operated Folders in which compressed air replaces the ratchets and pawls, springs, etc.
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For full details send for Bulletin No. 325A

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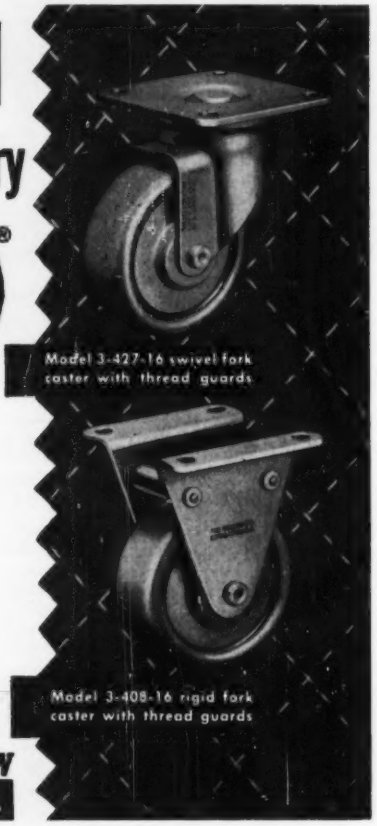

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CASTERS · LIFT JACK SYSTEMS · INDUSTRIAL TRUCKS

make an 80-gr. sliver with 15% variation.

Mill II

Opening: Blending feeders, a No. 12-No. 11 combination, and a Superior cleaner deliver 200 lb. per hr.

Picking: A three-beater picker with a Kirschner at the front makes a 14.5-oz. lap with a coefficient of variation under 1.20.

Carding: Production rate is 4.5 lb. per hr. of a 45-gr. sliver at under 15% variation on the Saco-Lowell tester.

Breaker drawing: Four-roll frames make a 75-gr. sliver at 130 ft. per min. Roll settings are above staple length, and drafts are 2, 2, and 1. Variation is less than 16%, and trumpet size is 0.160 in.

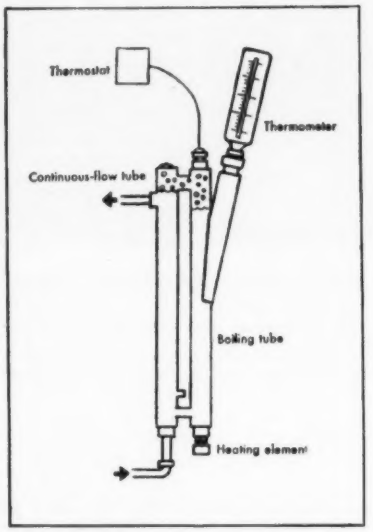
Combing: Whitin Model J combers take a 700-gr. lap and produce 30 lb. per hr. at 16% noils, with a variation below 20%.

Finisher drawing: Three-over-four frames make a 50-gr. sliver with variation under 12%.

Textile Equipment News

(*Continued from page 170*)

Air-Conditioning Unit Needs No Moisture-Sensitive Element



NO MOISTURE-SENSITIVE ELEMENT is necessary to determine relative humidity with a new instrument announced by Niagara Blower Co., 405 Lexington Ave., New York 17, N. Y. The air instead is dehumidified directly by a liquid absorbent in the air-conditioning unit.

As the air conditioner removes moisture from the air stream passing through it, the absorbent liquid becomes diluted; and it is continuously reconcentrated to keep it effective. The amount of moisture to be permitted

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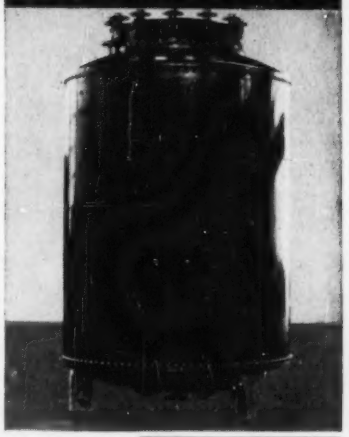

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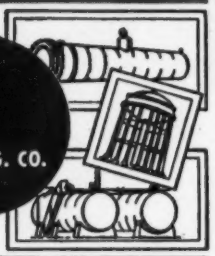

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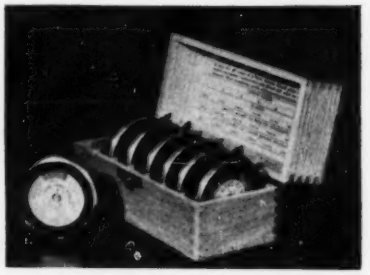
in the conditioned air is governed by the absorbent-liquid concentration.

The instrument consists essentially of a tube equipped with a heating element. The reconcentrated liquid enters this tube and is heated to its boiling point. A thermostat is set at the boiling point desired. The liquid's concentration is changed as needed to meet that boiling-point setting.

The higher the boiling point (concentration), the more moisture is pulled out of the air by the liquid absorbent.

Circle T-22 on Reader-Service Card

Refinements of pH Estimates Possible With New Paper



SHORT-RANGE INDICATING PAPERS that divide the pH scale of 0 to 14 into distinctive colors for each half unit and permit estimations to one-fourth unit or closer have been developed by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. The user merely moistens a strip of the appropriate paper, and while it is wet he matches it with the color key that is printed on the plastic dispenser of that paper.

The papers are thus a tool that combines the simplicity and speed of the universal litmus test with the versatility of more sensitive indicators.

In practice the new indicators are used with the company's long-range pH tester, which gives a rough estimate of pH over the full acid-alkali range. When he has found the approximate range with the long-range tester, he can refine his readings by using the new short-range paper.

Circle T-23 on Reader-Service Card

Questions AND *Answers*

Pile Fabrics Can Be Knitted on Tricot Machines

Technical Editor:

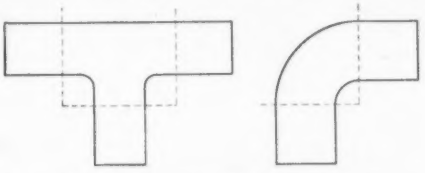
Is it possible to knit a pile fabric on a standard tricot machine? (9661)

A fabric that is suitable for brushing or napping can be made on a two-bar machine with a 1-0, 4-5 pattern

HOW TO SAVE MONEY ON STAINLESS PIPING

Speedline system cuts cost, increases flow and capacity

NEW 24-PAGE CATALOG describes and illustrates the many cost-saving advantages of *Speedline* Fittings with the "tangential feature". Size ranges and dimensions of all *Speedline* Fittings are also given along with helpful application information. Request your free copy on your company letterhead.



Look for the "Tangential Feature"

These drawings show a *Speedline* Tee and 90° Elbow. The dotted lines show the termination points of conventional fittings. The additional straight section of *Speedline* Fittings permits attaching of unions or flanges without fouling, reduces the number of welds required, and eliminates troublesome curved or angle joints. The tangential feature is common to all *Speedline* Fittings such as Ells, Tees, Crosses, etc.

● It will pay you to look into this new idea in corrosion-resistant piping. By using light wall stainless pipe and versatile *Speedline* Fittings, piping costs have been reduced 10% to 50% . . . and at the same time, flow and capacity of the line has been increased!

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. . . chances are that it is the conventional Schedule 40. But this heavy wall is not needed in 90% of the cases. Light wall Schedule 5 pipe costs about half as much, and all sizes will easily withstand 150 p.s.i. working pressures. *Speedline* Fittings are specially designed for fast, low-cost installation of light wall stainless pipe lines. And because light wall pipe of the same size has a larger inside diameter than heavy pipe, you gain 15% to 25% greater flow and capacity!

If you are now using Stainless Tubing . . .

. . . the *Speedline* system offers real savings and advantages. It permits you to change to a light wall *pipe* rather than *tubing* size—at no increase in cost. And here's where you gain. Standard equipment like valves, pumps, sight gauges, etc., are made in *pipe* sizes—you hook right in without special adapters! And equally important, *piping* permits you to use the next lower dimension (for example, 1" Sch. 5 pipe has even greater capacity than 1¼" O.D. tube). This means that you can use smaller valves, flanges, and other accessories—an entire installation would be considerably lower in cost.

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wheel on the front bar and a 2-3, 1-0 wheel on the back bar. An acetate yarn of 75 den. or heavier would be most suitable for the front beam. A high runner ratio is advisable. Vertical-line effects can be made by omitting threads from certain front guides.

A plush fabric can be made on a three-bar machine with a 0-0 wheel to control the middle bar so that the middle bar swings idly. The other wheels may produce any orthodox tricot stitch with the exception of a pillar stitch (1-0, 0-1 or 1-0, 1-0). Very little tension should be placed on the middle beam.

Tips on How To Prevent Weaving Skips

Technical Editor:

We have been unable to weave our wool lining fabric free of skips and floats. During weaving, the shed opening is not clean and does not allow free passage to the shuttle. Construction details are: 25/2/1 reed, 50-in. reed width, 50x28 ends and picks per inch, four-harness straight draw, and 2/28s cross-bred wool warp and filling. (9648)

Fabrics of this type usually give trouble in both dressing and weaving.

The important part of slashing is to get as much penetration and size content as possible. Some mills get good results with potato or corn starch and others with T-gum. A worsted-type slasher with a double dip of size would probably eliminate this condition. With this type of slasher, the yarn is dipped into the size, passed through part of the dryer, and then is run back into the size for a second dip. You may be able to arrange your present equipment for a double size dip.

Use a high size content, and keep the temperature around 160° F. in the size pan.

The shuttle skips in the fabric can probably be corrected by proper loom settings. These skips are caused by the warp ends sticking together between the harnesses and reed so that the shuttle goes over or under a few threads that do not break clean with the rest of the shed.

Another important consideration is the location of the skips—whether they appear all the way across the fabric or only on one or both sides.

If they are only on the sides and not in the middle, the loom is probably not adjusted properly. The shed should be set to open as much as possible. The cloth should be woven tight, and harness straps should be kept tight, with an even tension on each.

Picking-motion timing is important. An early pick will sometimes cause

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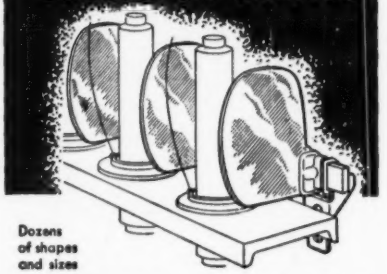

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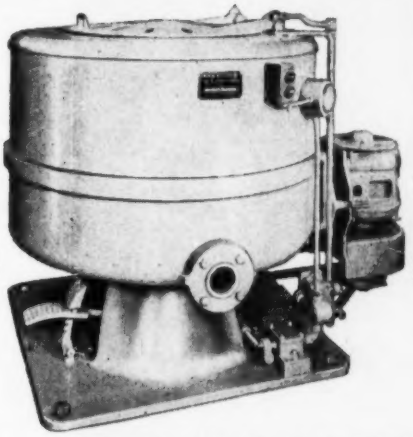

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This method undoubtedly has some merit; however, most throwsters are still using basket-type extractors, primarily because of the lower costs but also because cakes from different man-

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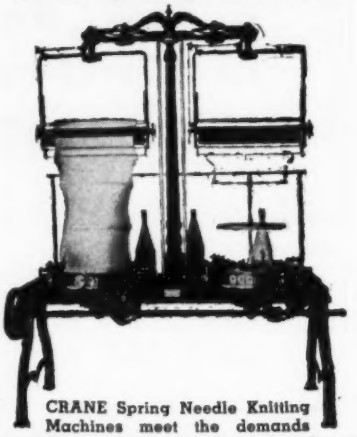

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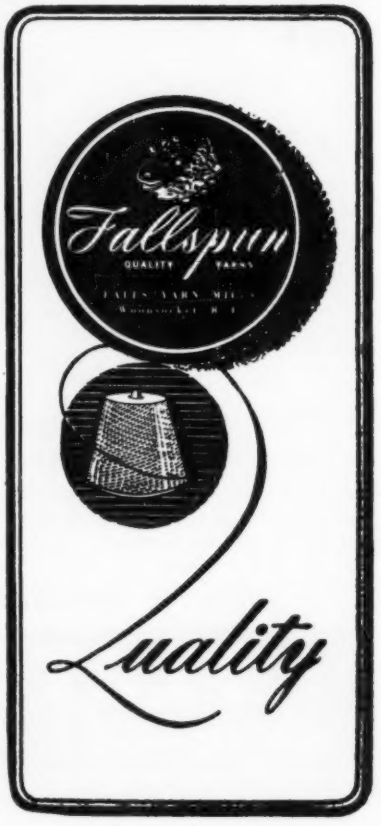

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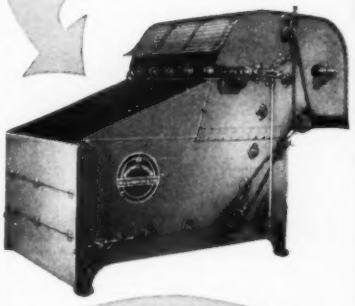

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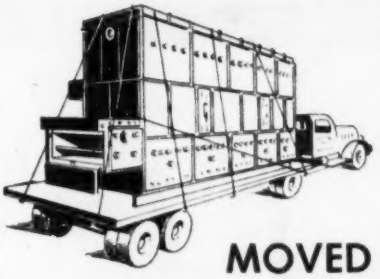

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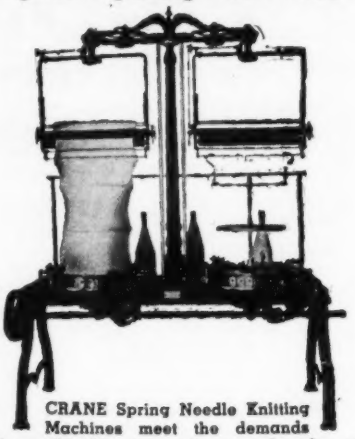

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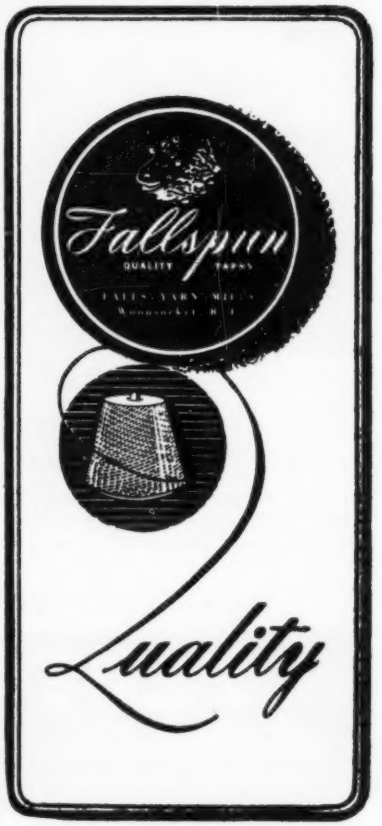

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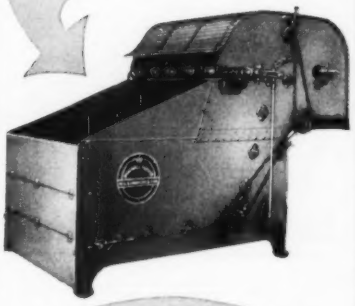

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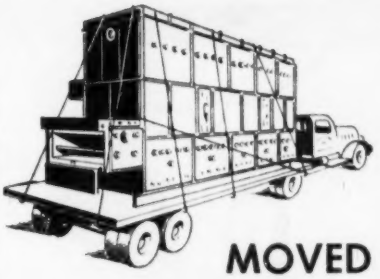

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also found that the new-type non-sloughing cams further reduced sloughing. The machine builders can supply these cams to fit your particular kind of frame.

The combination wind gave the best results in this particular mill, and a similar type of wind might aid in reducing sloughing on the Roto-Cone high-speed winding machine.

Wadding for Quilts Is Made From Several Fillers

Technical Editor:

What machines are used to manufacture cotton wadding for quilts? Please give us information about the process. (9641)

Fillings for comforters are made of cotton, wool, and other fibers. There are several grades of each type. Long-staple cotton of good grade is resilient and wears well. Short-staple cotton, usually coarser than long staple, is the second best type of cotton filling. The poorest wadding is made of cotton linters.

After blending and picking, the cotton stock is fed to a standard card by an automatic-weighing feed and run out in web form. Sometimes two or more cards are used to make a batting out of two or more webs. For a good grade of cotton batting, the filling should be distributed in one unbroken sheet or batt of uniform thickness.

A good batting should weigh not less than 3½ lb. for a 63x85-in. quilt or comforter and not less than 4½ lb. for a 63x90-in. quilt or comforter.

Good-grade battings are made of Low Middling cotton, Low Middling Spotted cotton, 100% cotton comber noils, or any combination of these grades. Good batting is thoroughly dusted, well blended, and free of foreign matter and any objectionable odor.

Dyes and Methods for Tricot Novelty Effects

Technical Editor:

We would like to know the method of obtaining novelty effects on nylon tricot fabric. Three samples are enclosed. What are the pastes and dyes used? (9647)

The patterns with the small gold print and white flocks could be done by either screen or machine printing. If you use the screen-printing method, watch the tensions in placing the cloth on the table.

Bronze powder or white pigment is in the print paste with the binder. Various resins might be used as binders—cellulose nitrate, vinyl resins, and rubber lattices. The last type, in a

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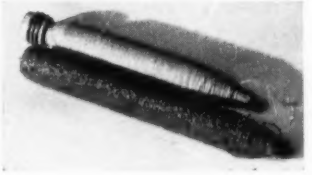

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Rayon Reports

Published Monthly by the American Viscose Corporation, New York, N. Y. June, 1953

Rayon Information Center Established To Serve Entire Rayon Producing Industry

Announcement has been made of the formation of a Rayon Information Center, with headquarters at 670 Fifth Avenue, New York 19, N. Y. Backed by the nation's rayon producers, it will fill a long-felt need for an official voice to speak for the entire rayon industry.

Through the years, because of its versatility, rayon has remained the most important of man-made fibers. Consumption in the United States last year was over 870 million pounds. However, even in the face of this amazing volume of usage, it is recognized that the public and sometimes the trade have taken rayon too much for granted. Too little has been made of its tremendous contributions to end products.

Rayon's Vital Place

It is expected that through the efforts of the industry-sponsored Rayon Information Center, rayon's vital place in the nation's economy and its importance in the lives of nearly everyone will be brought into strong, clear focus.

Among the first assignments undertaken by the Center has been the publicizing of the use of rayon in gowns worn at the Coronation.

Promotion Planned

Overall plans of the Center include both public relations and advertising programs. Field merchandisers will work with retailers, converters, and others in the trade. At the consumer level a complete educational program will be put into operation.

Requests for further information from anyone associated with the textile industry will be cordially received at the Center's headquarters.

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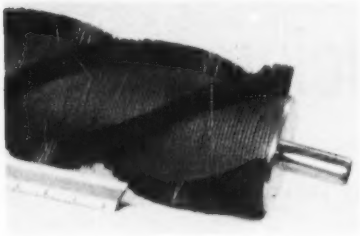

You would expect to pay much more for a metal core, nylon bristle card brush than for the usual wood core brush with all its faults.

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Woodside Avenue
Little Falls, New Jersey

water dispersion, is generally preferred. Add the coloring matter to this paste.

For the bronze print, add about 1 lb. of bronze powder to 1 gal. of synthetic-rubber dispersion. For the white print, a sufficient quantity of titanium oxide or zinc oxide should be added to give the proper effect.

Such pigment dispersions can be obtained from various manufacturers in paste form. Unless your firm has the proper equipment for dispersing the pigment in the binder, it is best to buy these pigment dispersions from a manufacturer.

The "flock"-print effect is obtained by applying the binding medium with a continuous stencil. The flock must be applied to both the back and the face of the goods. The stenciling machine is placed directly in front of the chamber where the cotton or rayon flock is dusted on. From here the goods pass into a drying chamber, and if resin binders are used, the goods must be given a subsequent cure. Various synthetic resins are used for the binder. The solvents in which these resins are dissolved evaporate quickly, and the cloth must enter the dusting chamber before the resin dries out. The dot of binder must not contract too much in drying, since a raised effect is desired.

Nylon Is the Only Yarn That Will Crack a Beam

Technical Editor:

Are there any other fibers besides nylon that have the so-called "memory effect" that causes warp beams to crack in warping? (9643)

No other fiber has the high contraction that nylon has, and nylon is the only fiber where tension is of importance for this particular reason. Tension control is quite important on all fibers, but on all others except nylon the tension control is kept below the elastic limit to prevent damage to the fiber. In the case of nylon, very high tension does not necessarily damage the fiber itself but causes a terrific contraction that is strong enough to ruin beams, bobbins, or any other type package.

Doffer Piece-Work Rate Is Not Wage Cost Per Pound

Technical Editor:

The article on doffer costs in the February issue was very interesting, and I would like to ask about two factors:

1. Contraction varies with the twist multipliers. Is this contraction included in the 92% efficiency?

2. Efficiency also varies with the yarn

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See Page 90 For Details

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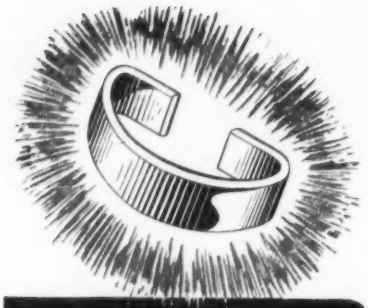

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number. Efficiency is less for 8s than 80s because of the additional downtime for doffing. How is this variance taken care of? (9658)

In calculating picce-work rates for doffers, yarn construction can be ignored because the only object at this stage is to relate doffer's pay to doffer's effort.

If it is necessary to find the actual wage cost for doffing a pound of yarn, the doffer's pay per pound is multiplied by a correction factor. The correction factor varies, depending on the twist multiplier, end breakage, and accuracy of the hank clocks.

The percent yarn contractions for different twist multipliers are:

Twist multiplier	Contraction (%)	Twist multiplier	Contraction (%)	Twist multiplier	Contraction (%)
3.00	3.10	3.80	5.20	4.60	7.35
3.10	3.40	3.90	5.50	4.70	7.60
3.20	3.63	4.00	5.70	4.80	7.85
3.30	3.90	4.10	6.00	4.90	8.15
3.40	4.15	4.20	6.30	5.00	8.40
3.50	4.40	4.30	6.55		
3.60	4.70	4.40	6.80		
3.70	4.95	4.50	7.05		

This table applies to cotton and would not be correct for other fibers. The 92% efficiency used in the article was from hank-clock readings.

True, the efficiency varies with the yarn number, twist multiplier, size of ring, length of bobbin, etc. To increase efficiency, an analysis of downtime is suggested. It may be found that as much time is lost waiting for the doffers as in actual doffing time. In this case, it may be profitable to reduce the doffer's workload to increase machine efficiency.

Textile Calendar

Canadian International Trade Fair, Exhibition Park, Toronto, Ont., Canada, June 1 to 12.

AATT, monthly meeting, Builders Club, New York, June 3.

AATCC, Piedmont Sect., Mayview Manor, Blowing Rock, N. C., June 12 and 13.

STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 18 to 20.

ASTM, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3.

Mass. Institute of Technology, summer research course, MIT, Cambridge, Mass., July 6 to 31.

Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 13 to 17.

International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31.

U. S. Testing Co., summer refresher course in textiles and testing, Hoboken, N. J., July 27 to Aug. 14.

AATT, monthly meeting, Builders Club, New York, Sept. 2.

Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Sept. 11.

AATCC, Piedmont Sect., Hotel Charlotte, Charlotte, N. C., Sept. 12.

International Fair of Ghent, Palais des Floralies, Ghent, Belgium, Sept. 12 to 27, 1953.

AATCC, national convention, Conrad Hilton Hotel, Chicago, Ill., Sept. 17 to 19.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 2.

AATT, monthly meeting, Builders Club, New York, Oct. 7.

Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24.

North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Oct. 23.

AATCC, R. I. Sect., Providence, Engineering Society, Providence, R. I., Oct. 23.

AATT, monthly meeting, Builders Club, New York, Nov. 4.

AATCC, Northern New England Sect., LTI, Lowell, Mass., Nov. 6.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 6.

AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Nov. 7.

TRI, annual meeting, Commodore Hotel, New York, Nov. 12 and 13.

AATT, monthly meeting, Builders Club, New York, Dec. 2.

AATCC, Northern New England Sect., Faculty House, MIT, Cambridge, Mass., Dec. 4.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 4.

AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 4.

AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., Dec. 5.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 11.

1954

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 15, 1954.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.

AATCC, national convention, Atlanta, Ga., Sept. 21 to 23, 1954.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

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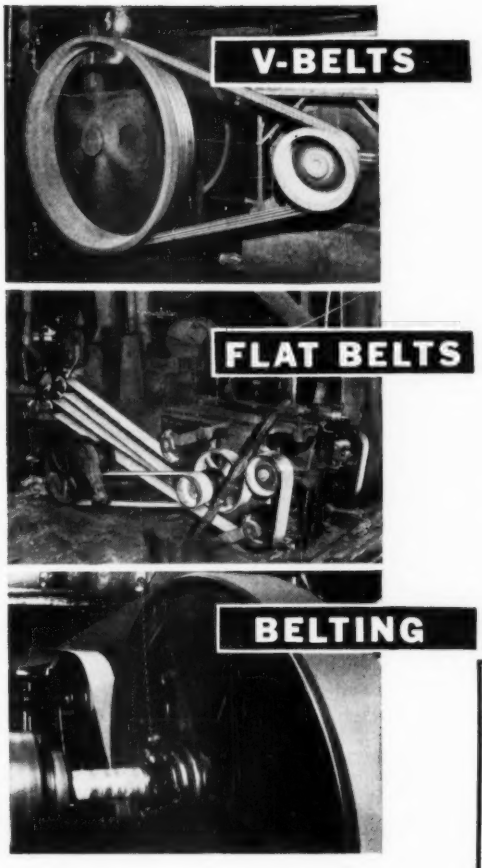

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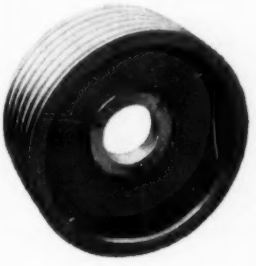

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Management and Supervisors Share Responsibility for SAFETY

By **ROBERT G. SHARP,** Weaving Overseer, Pacific Mills

WHAT DO WE SUPERVISORS EXPECT of top management to help promote safety in our departments? Our production job is clearly defined; and we have the means, support, and backing with which to do the job. This same real help is needed to make the safety program work, and the supervisor expects this help.

First, the supervisor should have full knowledge of company and departmental policies on safety. If the company doesn't have a well-defined policy, the supervisor can, by insistence, see that policies on safety are established.

Second, the supervisor should know his part in the safety program. His part includes his own responsibilities and the responsibilities of the people who work with him in the program.

Third, the supervisor should clearly understand the extent of support from management to decisions and actions that he may take in accordance with company policy.

Fourth, the supervisor should know how far he can develop his own initiative in making an individual approach to accident prevention.

Supervisor Must Have Tools

With this clear picture of his relationship to the safety program, the supervisor must be provided with the necessary tools to carry out his responsibilities. Management cannot expect any better results than the tools allow.

The tools:

1. Proper training in the technique of accident prevention
2. Staff assistance in planning the safety program and analyzing the causes of accidents
3. Sufficient material and safety aids to make the program gain and hold interest of every worker.
4. A suitable place for safety meetings.

In addition to these tools, top management should see that new employees are instructed at the time of employment in the importance of safety and the company policy or procedure in case of an accident. The supervisor should follow up this orientation with each new person assigned to his department.

Based on a speech to the Southern Textile Association.

Management Can Do Better

Is management in the textile industry meeting the challenge of safety responsibility as it has met the challenge of responsibility for efficient production?

Not entirely.

Top management in many mills is too prone to give only lip service to accident prevention.

Safety must be put on an equal level of importance with the principal phases of management. Mills have continuing programs for the betterment of quality and efficiency, but the average mill man thinks of safety only when accident frequencies get alarmingly high. Until this trend of thought changes, our accidents will continue to flourish.

How can management do better?

Considerable money is spent to give thorough technical training to men on new jobs and to prospective, new, and old supervisors. The same emphasis should be given to safety training. Money put out for such safety training will pay large dividends in return.

One high official of a large industrial organization personally investigates each serious accident as soon as he can reach the scene. He does it in an official capacity and also because he takes a personal interest in accident prevention. The employees appreciate his interest in their welfare, but each employee prefers not to be the next one investigated.

Top management should make it a point to drop in on meetings of the foreman and his employee safety committee at frequent intervals. Too many of the "Big Boys" never attend a supervisor's safety meeting.

Dropping in on such meetings gives added emphasis and importance to the work of committee members. They know that top management appreciates the work they are doing, and a sense of appreciation goes a long way toward building a safety record. If management neglects this practice, the supervisor should remind them. This reminder will not only get the boss to attend, but it will also earn the supervisor a reputation as a go-getter.

Company officials can show their appreciation for successful work in accident prevention by safety committeemen in other ways: a "pat on the back" through conversation with de-

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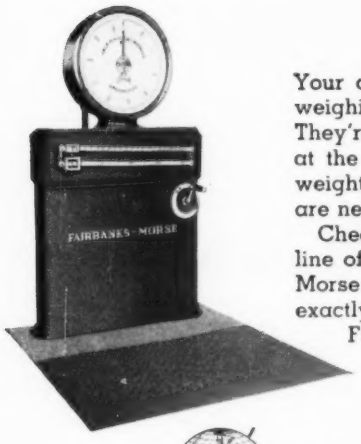

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partmental employees, presentation of a safety flag or plaque, and a trip to a state or regional safety conference for employee representatives of departments with outstanding safety records. For a new safety record a barbecue, with the entire department included, always hits the spot.

The incentive for accident prevention must be set up just as incentives are provided in production work. Here, again, the supervisor can do a good job by impressing management with the need for its active interest and participation.

Top management should clear safety recommendations from the supervisor or safety committee at once. Nothing is more discouraging to the safety worker than to have no action taken or explanation given on his recommendation.

In this case too, the supervisor might do well to give the needle to management, since the supervisor is the one who suffers if management delays too long in an answer to the recommendation of a worker. On the other hand, if a worth-while suggestion receives prompt action, you can count on many more good suggestions coming from the same source.

Safety Aids Help

There are several safety aids that I have seen working and know to be good.

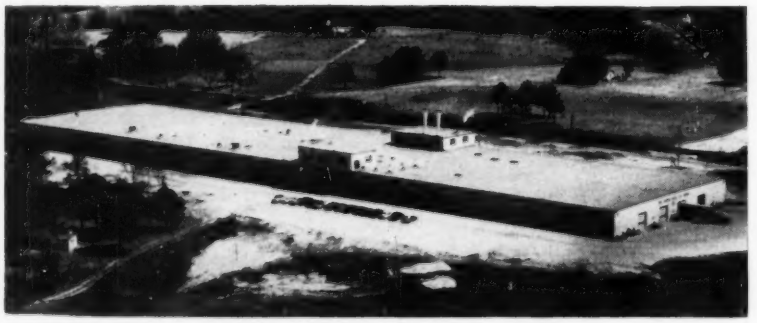
An industrial nurse, trained in textile-plant safety and the treatment of industrial accidents, spends nearly all her time visiting departments of the various plants, talking to employees and supervisors, looking for possible accident hazards, replenishing the stock of first-aid boxes, and checking on minor accidents. The mere presence of this uniformed nurse in a department will set an otherwise careless employee to thinking.

A bulletin board at the entrance to the plant shows the days operated since the last lost-time accident and the current record in manhours. The days operated are corrected each morning, and the manhours are posted as of the tenth of each month.

Visual education is another aid. Many plants have movie projectors with a sound attachment, and every safety meeting includes at least one interesting and helpful film on accident prevention. The safety-committee members at these meetings enjoy the meetings as well as get new and stimulating ideas.

First-aid training is an important aid that I have seen work. Every worker in the plant can receive standard Red Cross first-aid training, and each is encouraged to do so. A first-aid-trained worker is a safe worker, and you'd be surprised at the number of workers who want this training. The value is not so much in the actual training but in the first-hand knowledge that an injury is an important and serious event and trying to prevent it is worth serious attention.

New Piece-Dyeing Plant Uses Latest Equipment

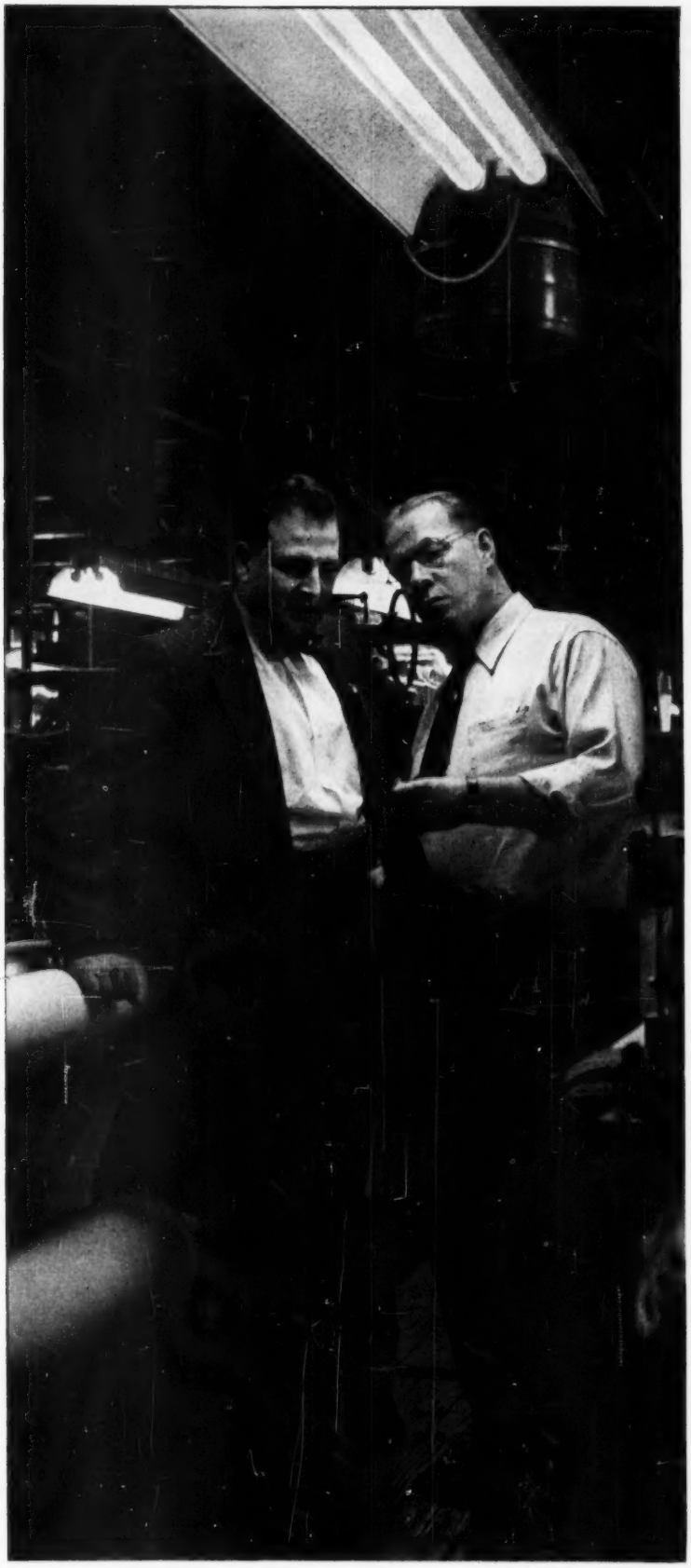


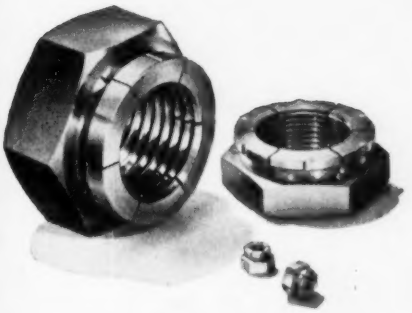
A COMPLETE NEW RAYON-FINISHING PLANT, consisting of 125,000 sq. ft. of working area of one-story construction, has been put into operation by the United Piece Dye Works. The plant is located adjacent to the Charleston, S. C., waterworks and is on a railroad siding.

TO TAKE ADVANTAGE OF a new water supply system being built at the junction of the Santee and Cooper rivers near the port of Charleston, S. C., a huge one-floor, steel-and-cement-block building was constructed by C. M. Guest & Sons of Greensboro, N. C., for the United Piece Dye Works.

Straight-line flow of goods is directed down one side of the work area and back to the shipping and receiving section after packaging.

Materials-handling equipment of the latest type—including some ingenious wrinkles designed and built by the company—makes full use of the spacious one-floor layout.





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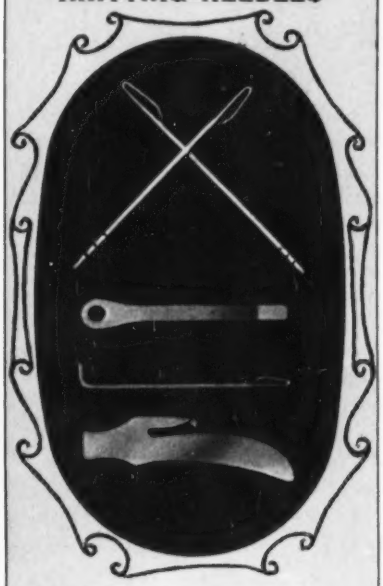

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News OF THE MONTH

HOSIERY MILLS ARE RESPONSIBLE

A better profit basis must be worked out again for hosiery mills, it was pointed out by W. F. Williamson, president of the National Association of Hosiery Manufacturers, at the recent annual meeting of the group in Atlantic City, N. J. The association president cited the fact that other industries bothered with overproduction have cut production down to size as needed.

Hosiery manufacturers who mislabel their products, sell at a loss, or offer unreasonable concessions make a strong trade association necessary. However, putting hosiery into the hands of the consumer on a profitable basis to the mills is the responsibility of the manufacturer.

ACMI SPEAKS OUT

Resolutions adopted at the recent convention of the American Cotton Manufacturers Institute at Palm Beach, Fla., (1) deplored the lowering of cotton standards as exemplified in the new USDA standards, (2) urged continued efforts to perfect a satisfactory bale covering for cotton, (3) recommended that ginners refrain from injuring cotton by overginning it, and (4) suggested that the Secretary of Agriculture does more harm than good in issuing premature estimates on the yearly cotton crop.

New officers of ACMI include H. K. Hallett, Kendall Mills, president; J. Craig Smith, Avondale Mills, first vice president; and Arthur K. Winget, American & Efird Mills, second vice president.

COTTON MERCERIZATION IN SKEINS

New apparatus for the experimental mercerization of cotton yarn in skeins has been constructed by researchers at Southern Regional Research Laboratory in New Orleans, La. The equipment, consisting of two balance-type machines suitable for treating skeins weighing up to 1 oz. and a frame-type machine capable of treating lots weighing up to 12 oz., make it possible to tell in advance which types or varieties of cotton are most suitable for commercial mercerization.

Specialized tension measurement makes it possible to compare yarns and fabrics under different mercerizing conditions.

"MAN OF THE SOUTH" AWARD

JAMES C. SELF, SR., (right) recently received the 1952 "Man of the South" award from R. B. Robertson of Champion Paper & Fiber Co., the 1950 winner. At the time of the award, Mr. Self revealed some interesting figures: how 30 years ago a new mill could be put up for $20 a spindle, while today the cost has risen to almost $200 a spindle.

NORTHERN TEXTILE ASSOCIATION

A new association has been formed by New England textile manufacturers to foster the industry in the North on a regional basis. Membership is open to firms actively engaged in manufacturing, bleaching, printing, or finishing of textiles in the New England or Middle Atlantic states. Associate membership is open to firms allied to textiles.

The idea for the new group originated with the New England cotton and rayon mills who are members of the National Association of Cotton Manufacturers. These mills number about 50. Headquarters for NTA will be at 80 Federal St., Boston 10, Mass.

RAW-COTTON MERCERIZATION STUDY

A contract for a 2½-year research study on mercerization of raw cotton

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TEXTILE MILL CRAYONS

IMPORTANT MEMBERS OF YOUR PRODUCTION TEAM . . .

Made by experts . . . after years of careful research . . . EMPIRE TEXTILE MILL CRAYONS meet the industry's most exacting requirements for textile marking and identification.

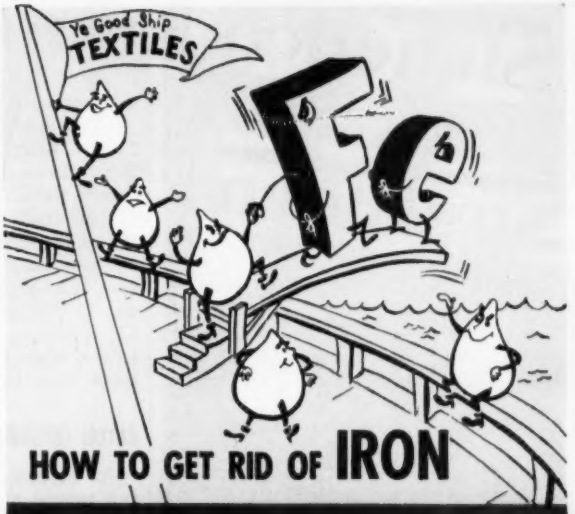
Every year, millions of these top-quality marking crayons join the production teams of textile mills across the nation.

Marking counts in efficient production. Count on EMPIRE TEXTILE MILL CRAYONS . . . First choice of textile experts everywhere! *Free marking guide gladly sent. Dept. T-8*

JUNIOR EMPIRE

EMPIRE TEXTILE MILL CRAYON

The American Crayon Company
Sandusky, Ohio — New York



HOW TO GET RID OF IRON
... Versene®

IRON — BANE OF PROCESSORS

In textile processing metallic contamination does things to fabrics and fibers that always spoil goods and cost money. Iron causes yellowing in white goods, prevents level dyeing, causes shade changes, spotting, streaking and is often responsible for crocking. Minute traces of copper, zinc, lead and other metals cause other problems of equal seriousness.

VERSENE ELIMINATES IRON

Versene-T, made especially to inactivate and solubilize iron and other metallic salts in concentrated caustic solutions, gets fibers and fabrics shades whiter. A *Versene* (Regular) rinse after viscose coagulation increases whiteness and tensile strength by removing lead, zinc and other metal impurities. *Versene* also extends the life and persistency of peroxide both in the bath and on the cloth. With synthetic and other detergents, *Versene* acts synergistically to get fabric and fibers cleaner. Because it removes the cause of metallic ion contamination, *Versene* can cut your costs, save yards of goods and miles of fibers. It is well worth investigation.

VERSENE QUALITY GUARANTEED

Made only under F. C. Bersworth processes and patents, the *Versenes* are guaranteed for uniformity of quality and chelating (complexing) power. Exceptionally stable at high temperatures throughout the pH range, they are available in liquid or dry form. Write Dept. D today for samples and Technical Bulletin #2. Chemical counsel on request.

VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gallon. Versenate method. Complete with instructions $5.00 Postpaid.

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Wasatch Chemical Co., Salt Lake City, Utah
Southwest Agents: Barada & Page, Inc., Dallas, Houston, Kansas City, etc.
Chas S. Tanner Co., 1815 Liberty Life Bldg., Charlotte, North Carolina
Siegel Chemical Co. – Brooklyn, N. Y.

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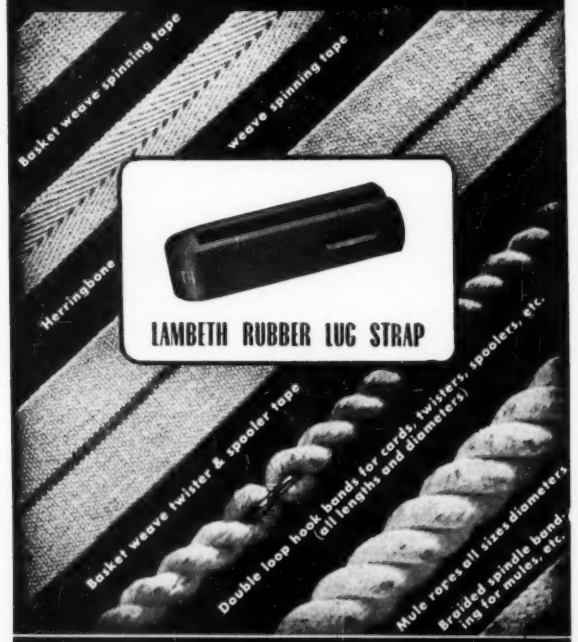
FOR SPINNING, TWISTING, SPOOLING, WEAVING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weave spinning tape
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Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

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"Weave the World's Needs"

1-C.IX

NEWS *of the Month*

without tension has been awarded to the School of Textiles, North Carolina State College, Raleigh, N. C., by the Research and Marketing Administration of the U. S. Dept. of Agriculture.

The study will be threefold: (1) determination of the best method of mercerizing raw cotton without tension, (2) determination of the best way to process cotton so treated, and (3) discovery of the properties of treated fibers and of yarns and fabrics made from the treated cotton.

RAYON INFORMATION CENTER

An industrywide rayon information and service program for mills, manufacturers, retailers, and consumers has been set up in New York City. Called the Rayon Information Center, the bureau has established its office at 670 Fifth Ave., New York.

The National Federation of Textiles and leading rayon producers worked together in establishing the center, which, it is hoped, will one day do for rayon what the National Cotton Council is doing for cotton. The program has an initial appropriation of $750,000 to work with. Ralph Bugli is director of the new organization.

FULL-FASHIONED MACHINE FIGURES

The year 1952 brought some interesting developments in full-fashioned knitting machines. Highlights are, according to Textile Machine Works' 1952 *Statistical Survey*:

- Machines decreased by 1,476 to a total of 9,469 machines in place at the end of the year.
- Average age of machines is 10.15 years, as compared to 12.62 years at the beginning of 1952.
- A total of 42.2% of equipment is five years old or less.
- Almost 25% of machine sections in place are 60 gauge or finer, as compared to 16.1% at the end of 1951.
- Over half of the productive equipment is now located in the South.

NYLON GARNETTS FOR DENIM

A new garnetted nylon for the cotton system of spinning has been developed by Star Woolen Co., Cohoes, N. Y., that is designed specifically for blending with cotton in the production of denim. The nylon garnett increases the strength and abrasion resistance of the basic fabric.

Nylon's qualities of easy washing, quick drying, and nonmatting are also added to work and utility clothes made of the blended denim.

WHITE NYLON LACE

GRAPHITE STAINS (left-hand sample) are no problem to the nylon-lace mills in England using the new Lacra colorless lubricant developed by the Lace Research Association of Nottingham. Nylon's affinity for graphite prevented the manufacture of white nylon lace for apparel purposes for several years.

The new oil's formula is secret, and only members of the lace group may buy it.

GORDON RESEARCH CONFERENCE

Speakers at the Gordon Research Conference to be held next month at Colby Junior College, New London, N. H., have been announced:

July 13—John A. Howsmon on the evaluation of the submicroscopic structure of fibers, and Leon Segal on decrystallization of cotton cellulose.

July 14—R. J. Andres on pressure dyeing of man-made fibers.

July 15—Pauline Beery Mack on recent developments in the science of textile maintenance, and Herman Bogaty on the chemical, physical and physiological characteristics of blended fabrics.

July 16—Myron J. Coplon on the influence of temperature on the tensile properties of various textile fibers.

July 17—D. J. Montgomery on the generation and conduction of electricity in fibrous materials.

COTTON-FABRIC ION-EXCHANGERS

The Southern Regional Research Laboratory has developed chemically modified cotton fabrics that are suitable for use as ion-exchangers in laboratory purifications and in certain

750,000

Miles Traveled...

Helping Mills With Their Harness Problems

Stehedco and Southern place every available service at the finger tips of the Weaver whether he is located next door to any one of the many Steel Heddle manufacturing plants, or very far from all.

Steel Heddle Field Engineers, step for step, are not only prepared to assist in solving mill problems, but are also equipped to supply the mill with a complete line of Quality Loom Harness requirements.

The Steel Heddle Field Engineer saves your time . . . because he only handles the Stehedco and Southern line.

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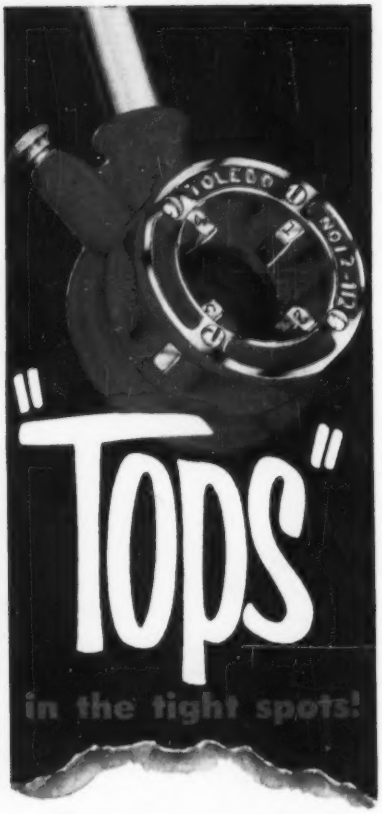

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DROP HEAD TOOLS

HANDY FOR CLOSE CORNER JOBS. These popular Toledo Ratchet Threaders are small, light, compact. Produce clean-cut threads easily . . . anywhere.

QUICK CHANGE OF SIZES. Die heads drop into ratchet from either side held securely.

DIES OF FINEST TOOL STEEL. Precision-ground. Die segments can be reground when dull or replaced at small expense. Three models: No. 00—⅛" to ¾"; No. 11—¼" to 1¼"; No. 12—½" to 2" pipe.

ORDER THROUGH YOUR SUPPLY HOUSE. Write for catalog 11a52. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

RELY ON THE LEADER

TOLEDO

PIPE TOOLS
POWER PIPE MACHINES
POWER DRIVES

NEWS *of the Month*

industrial processes such as the removal of basic or acidic groups from chemical solutions, dispersions, gases, and the like.

The cottons were altered by introducing certain reactive chemical groups to replace hydroxyl groups in the cellulose molecule. The fabric exchangers will probably replace resins for a number of ion-exchange uses because of their greater ease of handling and their reuse possibilities.

MAN-MADE-FIBER COURSE

A short course on man-made fibers will be held at Philadelphia Textile Institute, Germantown, Pa., June 15 to 19. It will be the annual third course to be sponsored by the Textile Fibres Institute and the Wool Stock Institute of the National Association of Waste Material Dealers, Inc., and the first such course to be held at PTI.

Highlighting the course will be a two-day seminar on the newer fibers, with practical demonstrations on the uses of synthetic fibers, on how the fibers can be recognized, and on how they fit into our economy.

U. S. COTTON EXPORTS LEAD

The world's leading exporter of cotton piece goods in 1952 was the United States. Japan was second, followed by Great Britain and India in that order.

Last year U. S. exports in the above category were 767-million sq. yd., as compared with 811 million in 1951. Japan's exports fell from 1,082-million sq. yd. in 1951 to 752 million. Britain dropped from 875 million to 711 million last year.

"INTEGRATED" CALIFORNIA MILL

California's Governor Earl Warren has signed a bill to permit the operation of a cotton textile plant at San Quentin Prison. The new unit will replace a jute mill formerly run at the prison.

The measure provides that the value of the goods produced will not exceed $1½ million a year. The cotton must also be grown in California. The clothing to be produced will be used by inmates of the State penal institutions and hospitals.

VISCOSE YARN FROM BAGASSE

Rayon Corp. of the Philippines, a $30-million company controlled by local sugar interests, has been incorporated in Manila to establish the world's first bagasse-to-fabric plant under one roof. Equipment for the mill is to be supplied by Oscar Kohorn & Co., Ltd., New York, N. Y.

The American firm has been working on the project a long time, because the conversion of Philippine bagasse (sugar-cane waste) into sulfite pulp for viscose-yarn manufacture posed unforeseen difficulties. Apparently, important modifications of known bagasse-pulping processes are to be made to allow the use of the material.

DYNEL-BLEND SUITS

A 35%-dynel, 65%-wool-blend flannel suiting weighing 9 to 10 oz. per sq. yd. has been introduced in men's suits by Browning King & Co., New York, N. Y., in collaboration with Union Carbide & Carbon Corp., supplier of dynel. The suits have increased strength, retain their shape and crease even in the rain, and have exceptional wrinkled recovery.

The basic fabric was woven by Cyril Johnson Woolen Co., Stafford Springs, Conn. The suits are priced to retail at $69.50.

MEXICO MOVES TO MODERNIZE

The Mexican government has officially decreed that no further changes in textile machinery can be made in Mexican mills without approval of the Mexican Secretary of Economy. The ruling has been made to insure that only latest-type equipment is placed in service in Mexico.

The Mexican textile industry is currently suffering from having to continue to use out-of-date machinery of all types. As a result it cannot cut its costs or meet present foreign competition.

1955 CANADIAN TEXTILE SHOW

The Textile Technical Federation of Canada is studying plans for the greatest exhibition in all phases of the Canadian textile industry ever to be staged in that country. A five-day exhibition to be held in April, 1955, in the Show Mart in Montreal is proposed.

The proposed exhibition is designed to bring home to the Canadian public and others the fact that the native textile industry produces a wide variety of fabrics that compare in quality with those produced anywhere else in the world.

DOW CORNING

Silicone Notes

ON FABRIC TREATMENTS

Why is DeCetex 104 Superdurable?

Recent investigations* prove that a DeCetex treatment completely envelops each individual fiber in a tightly bonded, flexible silicone surface. To establish this fact, a DeCetex-treated acetate suiting fabric was soaked for 24 hours in acetone. Photomicrographs were then made of the thin-walled silicone tubes that remained after the acetate fibers had been dissolved. Further enlargement of the inner surfaces of silicone tubes even showed impressions due to the characteristic surface irregularities of the fiber.

High resistance to oxidation, to temperature extremes and to a variety of chemicals is inherent in all silicone products. That's why these water repellent silicone tubes withstand repeated exposure to cleaning agents.

As further proof of the exceptional durability of DeCetex 104 as a water repellent treatment for fabrics we report spray-rating tests on four commercially treated fabrics subjected to three dry cleanings. These fabrics were cleaned with a standard load in a 30 x 30 Stoddard solvent washer using a dry cleaning soap and pre-spotter solution. The load was run with the soap and pre-spotter solution for 25 minutes without filter circulation. Samples which were not rinsed were removed, extracted and dried. The balance of the load was then rinsed for 20 minutes in fresh solvent with filter circulation. Samples were extracted and dried at 145°F for 25 minutes before conditioning and testing.

Effect of Commercial Dry Cleaning on DeCetex-treated Fabrics

Treatment	Acetate Spun Fill Filament Warp	50/50 Acetate and Spun Rayon	Acetate Spun Fabric	Acetate Filament Warp and Fill
	Spray Ratings			
None	100	100	100	100
1 Cleaning—no rinse	80	90	80	90
1 Cleaning & rinse	90	90	80	90
3 Cleaning & rinses	80	80	80	80

Resistance of DeCetex treated fabrics to laundering was also tested. Test samples were laundered in a reversing washwheel with 0.1% soap in water at 120°F for 40 minutes followed by 5 rinses at 100°F.

Laundering Durability of 50/50 Rayon Acetate Fabrics Commercial Treated with DeCetex 104

Sample	Percent Silicone Pickup	Spray Ratings Original	Wash 1	Wash 2	Wash 3
1	.86	100	90	90	90
2	1.10	100	90	90	90
3	1.00	100	90	90	90
4	1.20	100	90	100	90

In addition to superdurable water repellency, DeCetex imparts several other important characteristics to the fabric, including a desirable hand and excellent resistance to water-borne stains. DeCetex-treated fabrics seldom show mark-off as a result of the finish. They have superior resistance to wear; improved sewability, increased tear strength, greater stability and wrinkle resistance.

DeCetex is easily applied, dried and cured with conventional equipment. No corrosive chemicals are involved; no washing or neutralizing is required and treated fabrics remain odorless even after aging. For more information or for technical assistance, call our nearest branch office or write for Data Sheet AJ-6.

DOW CORNING SILICONES

*Fortess et al, Resin Finishing of Acetate Fabrics, Atlantic City meeting, A.C.S. Sept. 1952.

DOW CORNING CORPORATION

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Use productive capacity now wasted on foam; cut processing time with Dow Corning Antifoam A, the silicone defoamer that works at concentrations in the range of:

3 ppm ◊ in recirculating cooling brines
2.5 ppm ◊ in bottling soft drinks
2 ppm ◊ in varnish cooking
200 ppm ◊ in textile resin backings
0.4 ppm ◊ in steel pickling baths

◊ Effective at remarkably low concentrations in a wide variety of foamers, Dow Corning Antifoam A compound is harmless physiologically. It can be used as received, mixed with one of the foaming ingredients or dispersed in a solvent for industrial applications.

◊ Equally versatile and more easily dispersed, Dow Corning Antifoam AF Emulsion is a water dilutable defoamer containing 30% Antifoam A. Originally designed for use in the food processing industries, Dow Corning Antifoam AF Emulsion has a wide field of industrial usefulness.

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Please send me data and a free sample of—

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FRIEND OF THE PLANT OWNER... WHO HAS A WET SURFACE MAINTENANCE PROBLEM

The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, *wet* or dry, with equal ease and efficiency... changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.

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LIQUID PORCELAIN-LIKE
DAMP-TEX FOR
WET
OR DRY
SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada
Canadian Industrial Distributor: G. H. Wood & Co., Ltd., Toronto

NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

American Supply Co., Central Falls, R. I., has been appointed exclusive New England sales agents (with the exception of Fall River, Mass.) for the sale of flat steel heddles and harness frames manufactured by Pioneer Heddle & Reed Co., Inc., Atlanta, Ga.

Barber-Colman Co., Rockford, Ill., has expanded the service facilities for its Wheelco Instruments Div. New service engineers and their territories are: James Heinlen, Cincinnati, Ohio; James J. Hoffman, Jr., Cleveland, Ohio; D. J. Paker, Omaha, Neb.; Vernon N. Jennings, Tulsa, Okla. Barber-Colman recently opened a new factory branch office in Columbia, S. C., at 537 Harden St.

Beckman Instruments, Inc., South Pasadena, Cal., has made Dr. Elden D. Haller, who is its senior sales engineer, Eastern sales manager.

Borg-Warner Corp., Chicago, Ill., has appointed R. B. Crean administrative assistant to the president of its Ingersoll Products Div. Mr. Crean resigned as vice president of Eddystone Div., Baldwin Lima-Hamilton Corp., to assume the position.

H. Brinton Co., Philadelphia, Pa., has appointed Joseph M. Olachea, sales manager of the company after the recent resignation of H. W. Anderson. Mr. Anderson continues as president of Haskell-Dawes Machine Co.

Chapman Electric Neutralizer Co., Portland, Me., has appointed Louis P. Batson Co., Greenville, S. C., as its sales representative in the South.

HENRY H. RICHARDSON has been named by Universal Winding Co. to the position of sales manager in charge of domestic sales, W. S. Warren, vice president, has announced. Mr. Warren will continue to exercise general supervision over the sales department.

WILLIAM J. ROTHEMICH, divisional president of Textile Colors Div., Interchemical Corp., has been elected to the corporate board of directors.

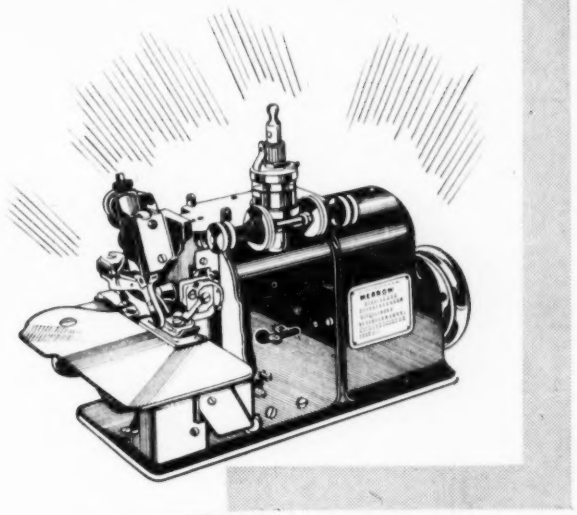
JAMES H. ORR, managing partner of Colonial Management Associates of Boston, has been made a director of Draper Corp., Hopedale, Mass.

Versatility

Merrow Class A Machines perform overseaming and trimming operations simultaneously. They form the one, two, or three-thread overseam or edge finish, or the three-thread tight needle thread seam.

These machines, used on most kinds of knitted and woven fabrics and plastics, are produced in many styles. By interchanging a few parts, each machine may be adapted to a great variety of operations on many different fabrics.

Smooth, high speed operation insures maximum production. Merrow quality and design minimizes "down time".



Write for brochures covering the Class A Machine. Free upon request.

TRADE MARK REG

The MERROW MACHINE COMPANY

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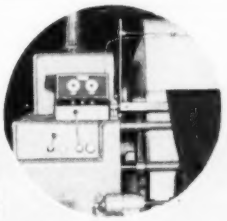
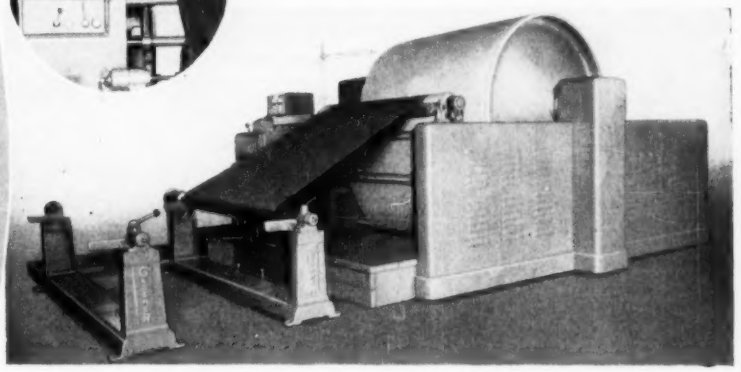
Do Your Semi Decating with a GESSNER VERSAMATIC



Gessner's new 60" Versamatic Decating Machine (insert) Hydraulic drive controls and apron guide mechanisms



Gessner's new Versamatic Semi-Decating Machines built with 36", 48" and 60" diameter cylinders, with five important features, combine the utmost in decating quality and quantity.

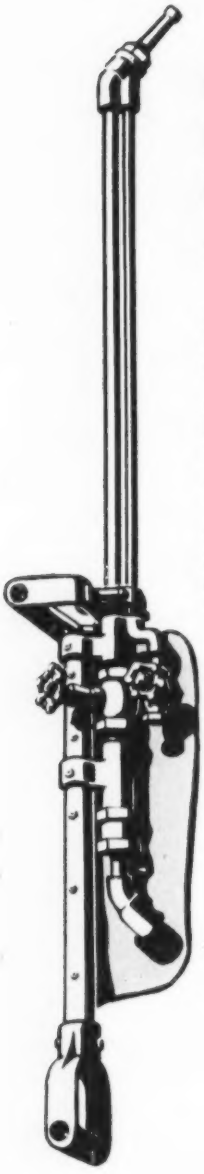
1. Hydraulic drive and infinite speed variations, and controlled pressure roll; 2. High operating speeds made possible by (a) the automatic apron tension control, (b) the automatic apron guider; 3. Foolproof, internally heated steaming cylinder; 4. Throttle steam with automatic cycle; 5. 60" Versamatic will decate 8 pieces or more of woolens or worsteds, and upwards of 1000 yards of synthetics per loading.

DAVID GESSNER CO.
WORCESTER, MASSACHUSETTS

Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ontario.

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

Oakite STEAM CLEANING



proves the best answer to low-cost equipment maintenance

Hooked up to your own steam supply, this scientifically designed Steam-Detergent Gun cuts cleaning time in half.

Gun gives you a powerful cleaning combination of steam force, heat, and detergent action. It's a grime-blasting mixture you can easily regulate merely by twisting a valve.

Oakite Steam-Detergent Cleaning eliminates costly hand scrubbing. It simplifies and speeds up cleaning . . . particularly around those hard-to-reach areas.

Mills report typical savings such as these:

- **Braiding machine now cleaned in place —time cut from 2 days to half an hour**
- **3½ hours cut off Diesel radiator cleaning time**
- **Dye vat cleaning costs cut from $25 to less than $10**

• • •

Use the Oakite Steam-Detergent Gun for stripping paint; for cleaning before rebuilding motors; for cleaning looms before overhaul. Descriptive folder of facts yours for the asking. Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

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MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

News About **SUPPLIERS** (Continued)

EDWARD W. LEGIER has been elected a vice president of American Blower Corp. He will be located in the New York offices.

WILLIAM O. WILSON, commercial vice president of Worthington Corp., has retired after 53 years of service.

Dixon Saddle Co., Bristol, R. I., has engaged William R. Fox, manufacturer's agent, to represent it in the New England territory.

Engineered Plastics, Inc., Gibsonville, N. C., has appointed Luther P. Corley as textile sales engineer to replace W. B. Meredith, II, who has resigned. Guy L. Robbins has been made industrial sales engineer.

The Fairbanks Co., New York, N. Y., has appointed James L. Ragland as manager of its new Rome, Ga., branch office. The office will maintain a complete stock of bronze and iron valves, trucks, casters and wheels, and Dart and Pic unions.

General Electric Co., Trumbull Electric Dept., Plainville, Conn., has made three changes in its field sales organization. J. E. Kerby was named manager of the newly created West Central district, with headquarters in Kansas City. A. P. McGraw was named manager of the Southwest district, with offices in Houston. J. E. Van Effen was named manager of the Cleveland district with headquarters in Columbus.

James Hunter Machine Co., North Adams, Mass., has signed a sales agreement to be represented in eleven Southern states by Marshall and Williams Sales Corp., Greenville, S. C. The Hunter staff representative, Carl Endlein, will remain in Atlanta, Ga.

Integra-Leeds & Northrup Ltd., Birmingham, England, was recently formed. Charles S. Redding, president of Leeds & Northrup Co., Philadelphia, Pa., and Maurice Bouffart, managing director of S. A. Integra, Liege, Belgium, made the announcement.

Lewis-Shepard, Watertown, Mass., has appointed A. W. Hooper exclusive representative for Alabama. Mr. Hooper will be located at 5245 S. Fifth Ave., Birmingham, Ala.

Raybestos-Manhattan, Inc., has elected W. S. Simpson, vice president in charge of the Raybestos Div. and appointed M. A. Thompson, assistant comptroller of the corporation. At the same board meeting, J. H. Merrell, vice president, Western sales division, was awarded the 50-year service pin.

S K F Industries, Inc., Philadelphia, Pa., has named David B. Eden, Jr., manager of its Charlotte, N. C., district.

Ton-Tex Corp., has moved from New York City to new and expanded quarters at 31 Columbus Ave., Englewood, N. J. In its new building, Ton-Tex will have increased, scientifically arranged production, development, and research facilities for its belting products and specialties.

U S Bobbin & Shuttle Co., Lawrence, Mass., has elected two new members to its board of directors: Duncan B. Cox of Cox & Co., Inc., New York, N. Y., and Donald K. Evans, treasurer of Riegel Textile Corp., New York, N. Y.

PRACTICAL PRESCRIPTIONS

Here are Talcott tonics for your business.

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Why not find out how Talcott can brighten your profit picture—and cure working capital headaches?

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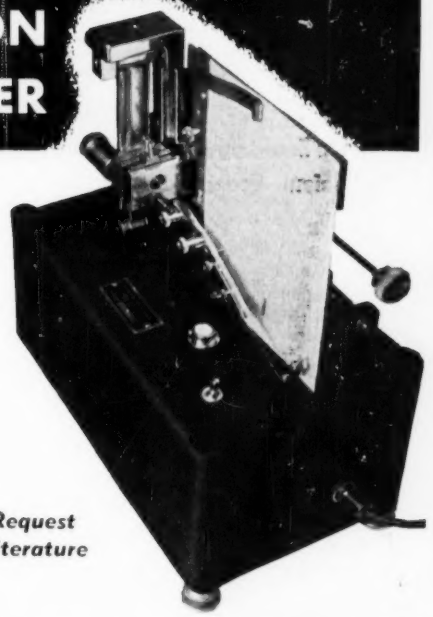
Announcing **SCOTT CLEMSON FLAT BUNDLE FIBRE TESTER**



An improved Tester that makes use of established sample techniques and existing clamp equipment, but

adds these advantages:—

1. Applies constant rate of load to sample.
2. Sample gauge length may be varied from 0 to 10 mm.
3. Motor driven, with control for either single tensile test or continuous hysteresis cycles.
4. Breaking load and elongation are recorded instantly without lag.
5. Produces a permanent record, reading directly in grams, useful for filing and reference.

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Even the sheerest, most delicate fabrics are desized with perfect safety by Exsize-T! That's why Exsize-T is used by many of the largest textile finishers.

Exsize-T is *not* a chemical—but a liquid enzyme concentrate. Efficient. Economical.

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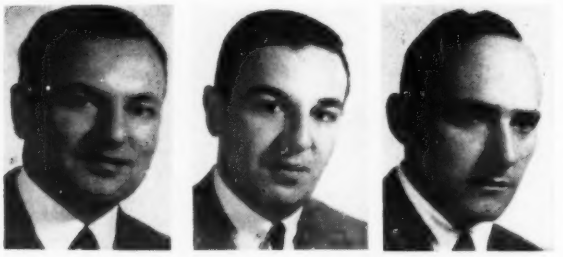
News About SUPPLIERS (Continued)



KEITH R. J. HORNER (left) has been named executive vice president of Ciba Co., Inc., a new post, in the New York office. WILLIAM H. KIEFFER (center) has been made general sales manager and DR. CHARLES J. WEIDMANN (right) technical director of the firm.

CHEMICAL AND YARN SUPPLIERS

Allied Chemical & Dye Corp., Solvay Process Div., Syracuse, N. Y., has named Paul A. Keene assistant to the director of development. Solvay will also proceed with construction of a new plant for production of potassium carbonate at its works in the Village of Solvay, N. Y. Cost of the new installation, including buildings and equipment, will be in excess of $2,000,000.

American Viscose Corp., Philadelphia, Pa., has transferred Charles R. Shaffer to the Public Relations Dept. from the Sylvania Sales Div. He will assist C. Stuart Brown, manager of public relations, in handling conventions, exhibits, and publicity for the Sylvania Div.

Aquex Development & Sales Corp., Whippany, N. J., has appointed Paul Snowman to head the paper chemical division of the company. He will also assist Chief Chemist Ray Smith with the firm's textile finish resins for synthetic fabrics.

Beaunit Mills, Inc., New York, N. Y., has appointed J. C. Fortune sales manager of American Bemberg. Mr. Fortune, who succeeds H. G. Spitzer, recently resigned, will continue in his position as advertising manager of American Bemberg.

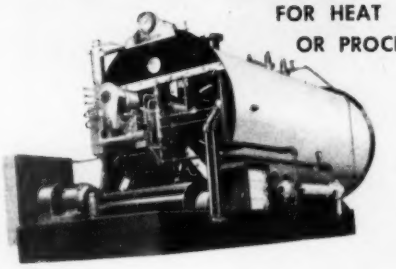
Carbide and Carbon Chemicals Co. Div., Union Carbide and Carbon Corp., New York, N. Y., has opened a New England sales office for the Textile Fibers Dept. at 34 Chelmsford Street, Chelmsford. Henry Pero, dynel district manager for New England, will be in charge of the office. He will be assisted by Richard S. Brissette, technical representative.

Chemstrand Corp., New York, N. Y., has named Bernard F. Bertland merchandising and promotion manager. At the Acrilan plant, Decatur, Ala., Walter H. Hammond was made supervisor in fiber production, and Lamar Beach and Philip D. Lawrence, Jr., were made process engineers. The nylon plant at Pensacola, Fla., made six appointments to supervisory positions in the engineering department: James E. Bromley, Edwin J. Dubus, Ernest A. Heckler, Alfred R. Johnson, Jr., Jesse H. Smithson, and George O. Young. Seven appointments were made to supervisory positions in the technical section: Clarence E. Rannefeld, Frank S. Riordan, Jr., Stanley T. Rolfson, Lawson R. Hanks, Jr., George F. Maynard, James B. McKoy, Jr., and Louis D. Scott. Robert M. Adams, Leonard L. Millar, David K. Whittington, and Arthur J. Zabinski were appointed production supervisors. In the yarn-production area, these supervisors were named: James B. Cagle, Walter E. Cavell, George T. Detwiler, George A. Johnson, George Malinoff, and George C. Tufts.

Colton Chemical Co., Cleveland, Ohio, has named new distributors for its products: Moreland Chemical Co., Spartanburg, S. C., in the Southern textile area; Van Waters & Rogers, Dallas, Texas, in Texas and Oklahoma; and Braun-Knecht-Heimann Co., San

STEAM

FOR HEAT
OR PROCESS



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Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

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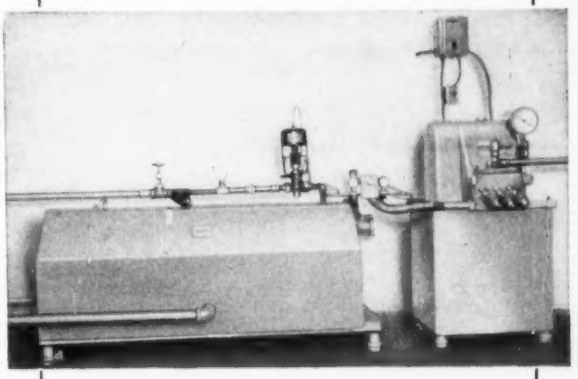
INCREASE EFFICIENCY



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★ Gives continuous, controlled flow of *uniform* size—at the rate of slasher consumption.

★ Eliminates all cooking time, wasted size and the varying dilution due to steam condensation.

★ Cuts steam consumption — by as much as 50%, according to recent mill tests.

★ Eliminates "soft" and poor running warps and warp-to-warp variation—increasing the efficiency of both slasher and loom.

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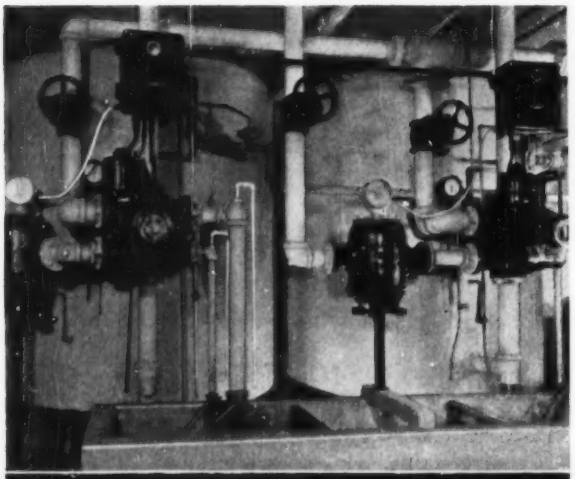

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That's why Permutit Water Softeners are in such demand! They're fast, sure and economical . . . produce water of **zero** hardness, free of damaging impurities. And with automatic controls, assure a constant supply of softened water . . . save operator's time, eliminate the possibility of costly human errors.

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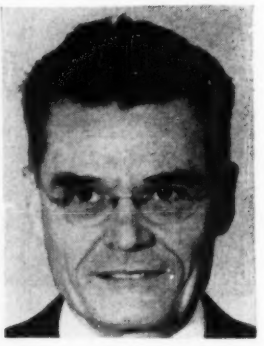
News About **SUPPLIERS** (Continued)



OSBORNE BEZANSON (left) has been elected chairman of the board of Chemstrand Corp. HENRY H. BITLER (right) has been named president and chief executive officer. The appointments are effective Dec. 1.

Francisco, Cal., in the Pacific coast states.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., Textile Fibers Dept., has promoted Dr. Lester S. Sinness to director of sales for its five fibers. He has been in charge of manufacture of Orlon and acetate. The move consolidates two sales positions left vacant by the recent death of P. F. Brown, who headed cellulosic-fiber and rubber-industry sales, and the resignation of M. G. Jones, who directed sales of synthetic fibers. The company also announced that a 30-den. dull-nylon yarn for use in the tricot industry to provide greater opaqueness in lighter fabrics is being produced on an experimental basis. The department hopes to manufacture this 30-den. nylon in limited quantities soon.

Reichhold Chemicals, Inc., Detroit, Mich., has set up a manufacturing division at Ballardvale, Mass., to produce its line of synthetic resins and basic industrial chemicals.

Richmond Oil, Soap & Chemical Co., Philadelphia, Pa., has transferred Henry M. Rubin, formerly in charge of the Charlotte, N. C., office to the main office in Philadelphia as sales manager. John E. Gallman is now in charge of the Charlotte office.

Rossville Dyestuff Corp., Staten Island, N. Y., has elected Ronald R. Menti president. Howard F. Johnson has been elected vice president in charges of sales.

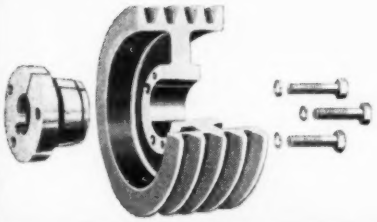
Chas S. Tanner Co., Providence, R. I., has named Ernest Blakely, Jr., Southern sales representative. Mr. Blakely, who was formerly connected with Frank Ix & Sons, Charlottesville, Va. will be located in Greenville, S. C.

OTHER SERVICES

George E. Elliott & Co., management consultants, New York, N. Y., has announced that it is affiliated with and holds controlling interest in Leetham, Simpson Ltd., management consultants, of Montreal and Toronto.

A. M. Romero, vice president and manager of the export division of Standard Mill Supply Co., Providence, R. I., has severed his connection with that company and has established his own export-management firm at 350 Fifth Ave., New York, N. Y. Mr. Romero was for several years with Saco-Lowell Shops before joining Standard Mill Supply Co.

Werner Textile Consultants, New York, N. Y., has taken over the P.O.M. Company, industrial consultants, an association with which it formerly worked. H. L. Werner and R. M. Ashner head the organization.



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More and more manufacturers are using this hub and rim combination. They know that taking off or putting on ordinary sheaves takes a lot of time and trouble, resulting in unnecessary machine down-time.

Wood's "Sure-Grip" Sheaves with interchangeable, one-piece tapered hubs (split from end to end) permit you to change the hub quickly and easily to fit shaft size, or to change the sheave to provide different speed. Dimensions are standardized for interchangeability, in A, B, C, D and E groove sections. Write for our descriptive catalog 192 and consult your Wood's Industrial Distributor.

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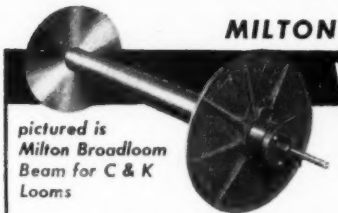

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pictured is Milton Broadloom Beam for C & K Looms

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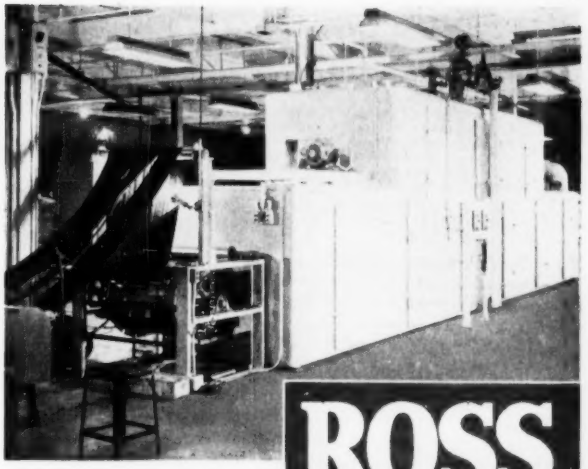
See Page 90 For Details

New *Man-Made* Fibers are introducing New Drying Problems



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are solving the tough ones

Here's a ROSS straight-pass dryer specially designed to permit circulation of a large volume of air for drying tops without scattering the fibers. Result—more uniform drying, improved quality and elimination of difficulties caused by intertwining. Just one of many similar problems solved by ROSS Engineering.

Consult us about ROSS Air Systems for drying and fusing material coated with organosols or plastisols, dipped, saturated or printed fabrics or sheeting. Utilize ROSS' 32 years of drying experience.

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These services will be under the direction of Mr. Peter M. Fekula now affiliated with Barnes Textile Associates, Inc. They will complement our established consulting activities in the fields of general engineering, industrial engineering, cost and quality control, materials handling and industrial relations.

Mr. Fekula has had broad experience in a variety of industries in both consulting and operating capacities. Recently he completed an outstanding project for a well-known textile company which brought about close coordination of production and sales. He has been able to apply to textiles many of the principles which have proved so successful in the automotive and aircraft industries.

We will be pleased to give further information about the services rendered by our new Peter M. Fekula Division, as well as by our other departments.

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for use in shrinking fabrics to the *"Sanforized"* standard by the compressive shrinking process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

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NEWS ABOUT Mills

COTTON MILLS

Callaway Mills Co., LaGrange, Ga., will build an addition to its main plant at a cost of about $100,000.

Canadian Cottons Ltd., Montreal, Que., has established an executive committee to concentrate on improvement of manufacturing, product development, market research, and sales promotion. In recent years, the company has spent over $12 million in renovating plant and equipment; further expenditures are now planned.

Chamber of Commerce, Winston-Salem, N. C., is reported to be negotiating for a textile plant that will produce suede cloth and will employ about 500 workers. Four square blocks in a warehouse area are under consideration for the new plant.

Clinton Cotton Mills, Clinton, S. C., expects to complete a 120,000-sq.-ft. addition, costing approximately $2,500,000, by late summer or early fall.

Coats & Clark, Inc., Toccoa, Ga., has awarded a contract at $7,000,000 to Daniel Construction Co., Greenville, S. C., for its local thread mill. J. E. Sirrine Co., Greenville, is the engineer. The company has awarded a $300,000 contract to the same builders for an addition to its existing plant.

Collins & Aikman, Inc., has sold 107 homes in its company village at Roxboro, N. C., to its employees. Appraised value of the property is $503,000.

Columbus Mfg. Co., Columbus, Ga., plans to sell 76 houses in its village in North Columbus to the employees who are now renting them.

Cosmos Imperial Mills Ltd., Cosmos Div., Yarmouth, N. S., is installing an air-conditioning system in its spinning department. Windows are closed up with glass block. The company has contracted with Werner Textile Consultants, New York, N. Y., to install a new system of quality and waste control.

Erwin Mills, Inc., Coolecmee, N. C., has let a contract to Gilbert Engineering Co., Statesville, N. C., for an extension in the filter plant at the mill.

Firestone Textiles, Gastonia, N. C., has completed an extension of the office area that increases working space by 75%.

Gaffney Mfg. Co., Gaffney, S. C., has awarded a contract to Fiske-Carter Construction Co., Greenville, S. C., for a one-story addition. Cost is about $26,117, exclusive of equipment.

D. Mackintosh & Sons, Inc., Holyoke, Mass., has bought the plant of Yarn Specialties, Inc., Clover, S. C., and will operate it as Mackintosh Spinning Mill, Inc. The Clover plant operates 33 cards, 14 combs, and 4,388 long-draft spindles on 8s to 20s combed yarns. A dyehouse may be added by the new owners.

Mayfair Mills, Arcadia, S. C., is planning to build a mill addition at a cost of $150,000. It is reported that 700 Draper X-2 looms will be installed.

Mollohon Mill, Newberry, S. C., has let a contract to Fiske-Carter Construction Co., Greenville, S. C., for a $100,000 plant addition.

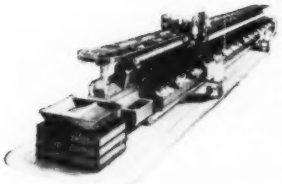
Oak River Mills, Bennettsville, S. C., will invest $1,000,000 in a proposed mill for which Charles T. Main, Inc., Boston, Mass., has drawn plans.

Sovelco Mills, Inc., New York, N. Y., has tentative plans to lease the Perkins & Newman warehouse on 25th St., Winston-Salem, N. C., to establish a cotton-suede-cloth plant. Fabric will be made by a special process developed by Allen Schnitzer, vice president. Zoning change is needed to permit manufacturing in the area selected.

Textile Sales Ltd., Montreal.

FLEXIBILITY

BARBER-COLMAN *Super Speed* WARPER



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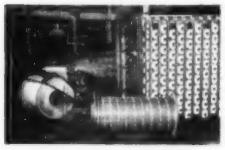
The companion machine, which winds cheeses for the Super-Speed Warper, is the automatic spooler shown above.



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The Super-Speed Warper is adaptable for slasher beams, dye beams, and balling.

Featuring...

- ★ Yarn change every set if necessary. No increase in help or down time.
- ★ Automatic let-off produces smooth, uniform beams with any number of ends or count.
- ★ Clock on driving drum measures yardage accurately.
- ★ Takes 16″ to 30″-head beams, including dye beams.
- ★ High-speed production, at 900 ypm, requires fewer machines.
- ★ Next set of cheeses loaded inside V Creel while running.
- ★ Floor space, warper and creel, only 28 by 38 feet.
- ★ Creel can be equipped for both cones and cheeses.
- ★ Ends speedily laid into individual comb dents.

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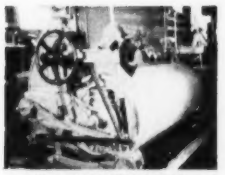

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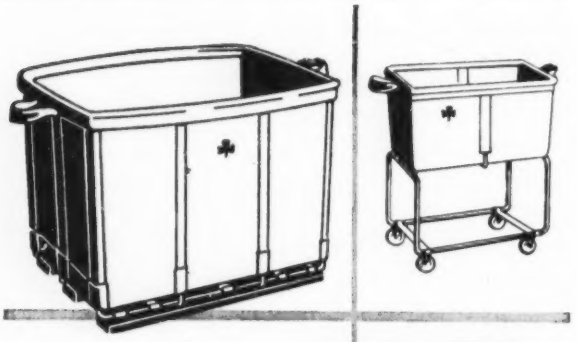

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News About **MILLS** (Continued)

Que., which recently took over the mill of Canadian Cottons Ltd., at Milltown, N. B., has installed new equipment, including 200 new looms. The company will renovate Gray's Inn into a community center for the use of its employees.

West Point Mfg. Co., and **Lanett Bleachery & Dye Works,** Lanett, Ala., have arranged for the sale of company-owned houses.

WOOLEN AND WORSTED MILLS

Abbot Worsted Co., Graniteville, Mass., has awarded a contract to Daniel Construction Co., Greenville, S. C., for a new worsted-yarn mill at Seneca, S. C. The one-story plant will contain 85,000 sq. ft. of space and will be totally enclosed, air conditioned, and finished in glazed tile.

John Alden Woolen Mills, Inc., Worcester, Mass., has purchased Wuskanut Worsted Corp., Farnumsville, Mass.

Ames Textile Corp., Southbridge, Mass., has begun a construction and modernization program with a 5,000-sq.-ft. addition to its worsted manufacturing facilities. New machinery will be installed.

Dacy, Inc., Rocky Mount, N. C., has leased a 75x123-ft. building to be constructed by Rocky Mount Industrial Development Corp. for use as a wool-processing plant. Harry L. Young, Fort Lauderdale, Fla., will become plant manager in July. The parent organization of Dacy, Inc., is located in Boston.

James Lees & Sons Co., Bridgeport, Pa., plans expansion and improvements in its mills during the next two years. The program will cost about $6,000,000, including equipment replacements. A considerable part of the fund will be used at the branch mill in Glasgow, Va.

C. H. Masland & Sons, Inc., Carlisle, Pa., has acquired the outstanding capital stock of Nice Yarn Co., Wakefield, R. I. Management of the yarn company will continue as before, but Masland will consume its entire yarn output. The Wakefield plant is equipped with carpet yarn spinning and dyeing equipment, including five sets of cards, 1,332 mule spindles, and 480 twisting spindles.

Pachaug Mills, Norwich, Conn., has completed installation of new equipment for the production of fancy and blended yarns of cashmere, nylon, and vicuna.

Rock & Freres, Nicolet, Que., is erecting a building containing 50,000 sq. ft. of floor space for the manufacture of woolen blankets.

Southern Worsted Mills, Inc., Greenville, S. C., has opened bids for a new $100,000 plant addition to house a supply room, storage space, and a slasher room.

Stanrich Mills Corp., Worcester, Mass., has started a service on commission carding and spinning, weaving, and finishing. Richard S. Marcus is in charge.

SYNTHETICS MILLS

Bigelow-Sanford Carpet Co., New York, N. Y., has established a new fiber-glass products division for the production of batts and woven cloth for use in reinforced plastics. L. M. Calhoun, lately with Deering, Milliken & Co., in charge of sales of fiber-glass industrial fabrics, will head Bigelow-Sanford's new department.

Burlington Mills Corp., New York, N. Y., has made Printed Fabrics Div., Passaic, N. J., a part of its finished-dress-fabrics operation under the direction of Jules Wareck. Max Sternberg will continue in charge of printed-fabric activities.

Clarkesville Div., United Merchants & Manufacturers, Inc., Clarksville, Ga., is expanding its throwing department.

Fine Silk Ltd., Midland, Ont., has converted much of its equipment for the production of fabric from Fiberglas.

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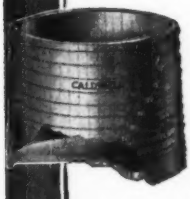

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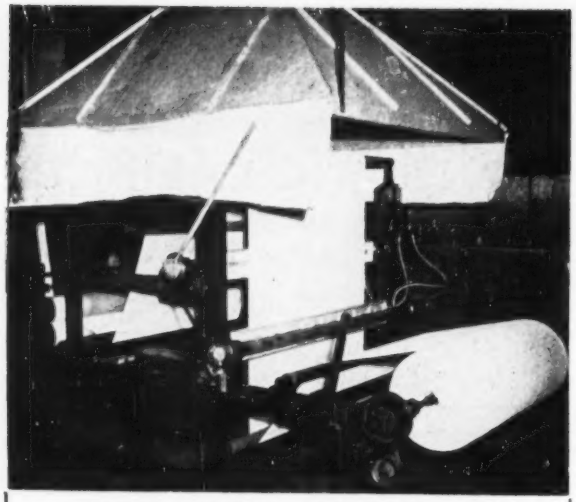

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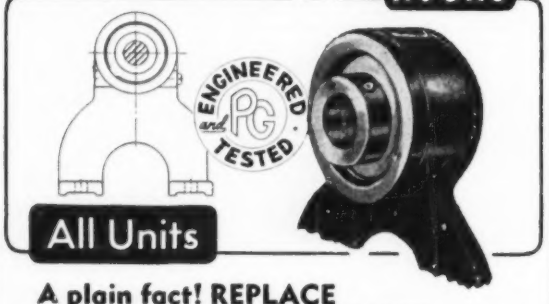

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News About **MILLS** (Continued)

McComb Yarn Co., McComb, Miss., is assured of its new plant by the favorable vote of citizens on a $150,000 BAWI bond issue. The mill will be the first throwing plant in the vicinity.

Ottaray Mill, Anderson, S. C., has been purchased by LaFrance Automotive Fabrics, Inc., a subsidiary of LaFrance Industries, Inc., LaFrance, S. C.

South Carolina Mills, Spartanburg, S. C., is installing $200,000 worth of machinery for a new weaving mill in a building near Saxon, formerly occupied by Raycord, Inc. Raycord has moved its entire operations to another site at Camp Wadsworth.

KNITTING MILLS

Allen Knitting Mills, Inc., Brooklyn, N. Y., has opened a new plant in Richmond Hill, N. Y.

Belding Textile Mills, Inc., Redlands, Calif., has started construction of a new one-story addition that will contain about 10,000 sq. ft. of floor space.

Belknap Mills Corp., Laconia, N. H., has purchased Sulloway Hosiery Mills, Franklin, N. H. Machinery will be consolidated into the facilities at Laconia; and the plant at Franklin, with 100,000 sq. ft. of manufacturing space, is in the hands of a syndicate for other use.

Boyle Knitting Mills, Inc., Hurley, Miss., has been granted a charter of incorporation listing capital stock of $20,000.

William Carter Co., Needham Heights, Mass., will build a new plant in Senatobia, Miss., to produce nylon-tricot lingerie and children's garments. The one-story, air-conditioned mill will contain about 50,000 sq. ft. of floor space.

Chatelaine Hosiery Ltd., St. Johns, Que., plans to build a new plant unit.

Coopers, Inc., Millen, Ga., plans expansion of facilities for knitting and bleaching operations. The project will cost $150,000.

Crossville, Tenn.—Knit Sales Corp. has been organized to make and distribute warp-knit fabrics of nylon, rayon, and blends for men's sportswear. Organizers are Irving Miller, formerly with Pepperell Mfg. Co., and Joseph Palmer, formerly with Cohn-Hall-Marx, Inc. David Morgan, formerly with Gehring Textile Co., has been named production manager. Machinery includes raschel and two- and three-bar tricot.

Eagle Knitting Mills, Inc., Milwaukee, Wis., is completing a four-story addition to the mill. The structure cost about $125,000.

Fenwick Hosiery Mill, Belmont, N. H., is adding a three-story addition to its plant. Alcide O. Cormier is owner of the firm. The addition is the first step in an expansion program to double the size of the present mill.

Flagg-Utica Corp., Utica, N. Y., is moving machinery from its Sherburne, N. Y., plant to its Utica plants.

General Knitting Mills, Inc., Allentown, Pa., plans to establish a plant in a leased building at Monroe, N. C. The building, now under construction, will contain 25,000 sq. ft. About 65 new circular knitting machines will be installed, and operations in Allentown will be discontinued. It is reported that a finishing plant in eastern Pennsylvania is interested in setting up operations near General at Monroe.

Grantville Mills, Grantville, Ga., has asked bids for a new one-story addition for extension of its packing and shipping department. The construction contract will be let soon. Robert & Co. Associates, Inc., Atlanta, Ga., is architect and engineer.

J. B. Green, Fort Payne, Ala., has opened a new hosiery mill in the H. H. Wilson Bldg. The plant employs 60 on two shifts. Mr. Green was formerly superintendent of the hosiery mill of W. B. Davis & Sons, Inc., Fort Payne.

News About **MILLS** (Continued)

Kayby Hosiery Mill of North Carolina, Inc., High Point, N. C., will open a new plant at 1509 English St. to manufacture women's and children's hosiery. More than $200,000 worth of knitting equipment will be installed. The company has related plants in Philadelphia, Pa., and Anaheim, Calif.

McCallum Div., Claussner Hosiery Co., Florence, Mass., has installed the first of four new Lieberknecht full-fashioned hosiery machines. The 66-gauge, 32-section machines will run on 12-denier nylon.

Monroe Mills, Monroeville, Ala., has laid the foundation for a new $200,000 plant addition that will contain 41,000 sq. ft. for a new dye department, added warehouse space, and enlarged shipping facilities. Vanity Fair Mills, Inc., is operator of the mill.

I. Sherry Co., Reading, Pa. Capital stock of this firm has been purchased by Samuel H. Batt and William and Stanley Myer from Arthur and Gerald Sherry. The new owners will undertake repairs and re-equipment of the knitting department.

Skyland Textile Co., Morganton, N. C., plans to establish a $450,000 textile plant near Sylva, N. C., that will employ 300 persons at full capacity. The building will be erected one mile east of Sylva on U. S. Highway 19-A by the newly formed Jackson County Industries, Inc.

DYEING & FINISHING PLANTS

Berkshire Fine Spinning Associates, Inc., has purchased Lincoln Bleachery, Lonsdale, R. I., and is planning to begin its operation as an integrated part of its fine-cotton-goods production. Later, Berkshire plans to expand Lincoln's capacity until it can handle all of Berkshire's finishing needs.

Burlington Mills Corp., Greensboro, N. C., has begun construction of a new half-hose finishing plant in Randolph county just north of Asheboro, N. C. The new plant will be Burlington's fifth textile operation in Randolph county.

Cabin Crafts, Inc., Dalton, Ga., has begun construction of a new dyeing and finishing mill, 52x220 ft., one-story, to be used for expansion of the firm's Needletuft carpet division.

Cranston Print Works Co., Fletcher, N. C., has let a contract to Fiske-Carter Construction Co., Greenville, S. C., for an addition to its mill.

Crompton Co., West Warwick, R. I., will begin construction of a corduroy finishing plant in Osceola, Ark., this spring. The plant will be known as Osceola Finishing Co. and will have one-shift capacity of 6,000,000 yd. of corduroy annually.

Delta Finishing Div. of J. P. Stevens & Co., Wallace, S. C., has completed an addition.

Housatonic Dyeing & Printing Co., Derby, Conn., has awarded a contract to Fred J. Smith, Orange, Conn., for a one-story addition.

Kelly Dyeing & Finishing Co., Charlotte, N. C., has completed the installation of additional boarding and other equipment. Finishing capacity has been increased to 9,000 doz. stockings weekly.

Lee Dyeing Co. of North Carolina, Inc., Butner, N. C., will be under the direction of Benjamin Wishietsky. The plant will dye and finish tricot, raschel, and simplex fabrics made of cotton, wool, nylon, acetate, Dacron, and other synthetic fibers. Lines will include lingerie, dress fabrics, glove cloths, various nets, and tulles.

Mount Hope Finishing Co., Inc., Butner, N. C., has completed a $150,000 improvement program that will permit finishing of wider nylon fabrics. Additions include a thermostatic heat-setting unit to finish 66-in. goods.

Regency Dyeing Corp., New York, N. Y., is said to be negotiating for machinery and a plant site.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has awarded a contract to ABC Ditching Co., Columbia, S. C., for a new pipe-line installation for water service.

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NEWS ABOUT *Men*

Borden D. Billings has been appointed general superintendent of Baltic Mills of American Woolen Co., Enfield, N. H.

Col. W. C. Bliss, plant engineer of Fulton Bag & Cotton Mills, Atlanta, Ga., has retired and plans to do consulting work.

Joseph W. Brogden, former overseer of spinning at Nashawena Mills, New Bedford, Mass., has joined Dayton Rubber Co., Dayton, Ohio, as field engineer.

W. H. Burroughs, vice president and secretary of Reeves Bros., Inc., New York, N. Y., has resigned to open his own management-consultant business.

J. Harris Cannon has been elected vice president and a director of Cannon Mills, Kannapolis, N. C. **Joe C. Ridenhour** has been named assistant secretary.

Ray E. Chandler now heads all production planning for Robbins Mills, Robbins, N. C. Mr. Chandler has been in charge of planning for the suiting divisions at Aberdeen and Raeford, N. C. He succeeded **Arthur M. Spiro**, who is now co-ordinating manufacturing and merchandising policies of the company.

Michael Clacherty has joined the quality-control department of Textron, Inc. He was formerly with Deering, Milliken & Co., Inc., New York, N. Y.

Spencer Clark has resigned as overseer of dyeing at Cheney Brothers, Manchester, Conn.

Lawrence S. Cockburn has been appointed general superintendent of Anderson Mills of American Woolen Co., Skowhegan, Me., to succeed **Thomas L. Greenway.**

John K. Cochran, general manager of weaving and throwing plants of Duplan Corp., Hazelton, Pa., and a director of the company, has been elected a vice president. He will transfer his office from Hazelton to Charlotte, N. C., in the next few months.

James H. Conners, former dyer for Faith Mills, Averill Park, N. Y., is now head of the dyeing department of Union Piece Dye Works, West Sand Lake, N. Y.

RAYMOND F. CLARK, vice president in charge of the industrial-products division of Hess, Goldsmith & Co., Inc., New York, N. Y., has been elected a director.

JAMES M. ELLIOTT has been elected president of Alexander Smith, Inc., Yonkers, N. Y. He succeeds William F. C. Ewing, who will continue as chairman of the board.

News About **MEN** (Continued)

David M. Cooper has joined St. George Textile Corp., New York, N. Y., as head of its industrial-fabrics division.

Willard L. Crane, one of the founders of Glendale Knitting Corp., Perry, N. Y., has resigned as the firm's general manager.

W. Earl Crenshaw has been elected vice president and general manager of manufacturing for Dixie Mercerizing Co., Chattanooga, Tenn. He has been with Springs Cotton Mills for the last seven years as general superintendent of spinning and a member of the board.

J. R. Durham, Sr., who has been vice president, assistant treasurer, and secretary of Hanes Dye & Finishing Co., Winston-Salem, N. C., has been promoted to executive vice president and assistant treasurer. **J. R. Durham, Jr.**, who has been assistant secretary, has been named secretary.

R. W. Faires, formerly superintendent of the Nelson and Whitnel spun-fibers plants of American & Efird Mills, Inc., Mount Holly, N. C., has been named general superintendent. He replaces **James H. Martin**, who was made vice president and general manager of manufacturing and a director. **Dwight Scoggins**, formerly superintendent of Rush plant, Mount Holly, has been made superintendent to succeed Mr. Faires.

Cliff P. Flanagan is now president of Charlotte Finishing Co., Inc., Charlotte, N. C. Other officers include: **Baxter D. Huntley**, executive vice president; **M. A. Bogoff**, vice president; **Jack N. Bogoff**, treasurer; **William F. Robinson**, secretary; **Seymour Brodis**, assistant treasurer; and **Buford D. Griffin**, assistant secretary.

W. M. Ford has resigned as treasurer and general manager of Laurens Mills, Laurens, S. C. He is succeeded as treasurer by **Alan B. Sibley**, vice president of Judson and other mills in the Deering-Milliken group. **George Asnip**, local manager of Gerrish-Milliken Mill at Pendleton, will become general manager of Laurens Mills. Mr. Asnip will be succeeded by **L. J. Fisher, Jr.**, now superintendent of Kingsley Mill at Thomson, Ga. **W. E. Thrailkill** succeeds Mr. Fisher.

Roy Gavitt has been named superintendent of the Peterborough Div. of Vernay Corp., West Peterborough, N. H.

Mack Hatch, founder, president, and general manager of Belvedere Hosiery Co., Charlotte, N. C., has retired. **Robert H. Theiling, Jr.**, has been named office manager and production coordinator. **B. D. Wilhelm** has been made general superintendent.

Harold F. Hedberg, assistant vice president and formerly superintendent of the Albany, N. Y., plant of Albany Felt Co., is in charge of the new research and development department and will supervise two laboratories. **Everett C.**

E. B. SHAW has been elected vice president in charge of all manufacturing operations of The American Thread Co.

W. S. EGEKVIST has been appointed assistant to the president of Julius Kayser & Co., New York, N. Y.

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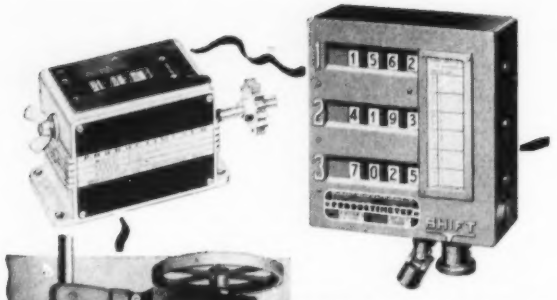

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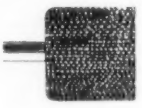

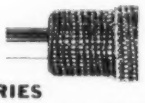

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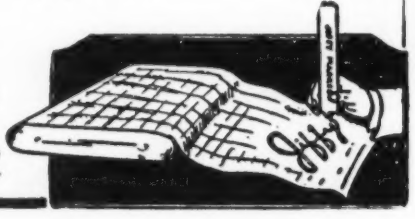

News About **MEN** (Continued)

Reed, former assistant superintendent, has been appointed plant manager for Albany and Hoosick Falls. He will be assisted by **Wayne F. Fry**, former yarn superintendent, as production manager.

Raymond E. Henderson, who had been general superintendent of Dan River Mills, Inc., Danville, Va., since 1949, has been named manager of Mill B of Goodall-Sanford, Inc., Sanford, Me.

Robert B. Hull, assigned to the textile division of Firestone Tire & Rubber Co., Akron, Ohio, for the past eight years, has been named quality-control manager for the Gastonia, N. C., plant of the textile division. He replaces **Clyde E. Moss**, recently promoted to assistant superintendent.

Frederick A. Jenckes, a vice president of Burlington Mills Corp., New York, N. Y., and **Edmon G. Luke**, president of Fox Wells Luke Division, Inc., have resigned their posts to accept positions as vice presidents of Textron, Inc. **Robert M. Cushman** and **Frank Fiore** have also been elected vice presidents of Textron.

Fred T. Lawson, superintendent of the Harris Plant of Greenwood Mills, Greenwood, S. C., since it began operations three years ago, has resigned. He has been succeeded by **N. R. Whitener**, who has been planning and production manager of the Harris Plant. **Julian Waldrop**, formerly supervisor in the preparation department, succeeds Mr. Whitener.

J. Colby Lewis, vice president and general manager of J. & P. Coats, Pawtucket, R. I., for the past 17 years, has been named vice president and general manager of all American mills in the Coats & Clark, Inc., chain. Mr. Lewis will continue to maintain his office at the Pawtucket, R. I., plant.

Ivory Littlefield, Jr., has been named superintendent of Allendale Co., North Providence, R. I. Mr. Littlefield succeeds the late **Herman Andrews**. Mr. Littlefield was formerly assistant superintendent of Steere Mill of Wanskuck Co.

James H. Martin, Jr., general superintendent of American & Efird Mills, Mount Holly, N. C., has been promoted to vice president and general manager. **E. H. Timanus**, formerly vice president in charge of operations of Spun Fibers Div., Lenoir, N. C., has been promoted to American & Efird assistant vice president in charge of spun-fibers operations. **A. W. Bell**, vice president and general manager of American & Efird Mills for the past six years, was named executive vice president.

D. M. Pennington has been made superintendent of Mill No. 3 of Republic Cotton Mills, Great Falls, S. C. **W. H. White**, who has been superintendent, is on sick leave.

John W. Poulson, executive vice president, has been elected president of Fruit of the Loom, Inc., Boston, Mass. He succeeds **S. Bruce Smart**, who is now chairman of the board.

HERMAN E. GOODMAN (left) has been elected chairman of the board of Robbins Mills, Inc., New York, N. Y. MALCOLM G. JONES (right) has been elected president. Karl Robbins has been named honorary chairman of the board, and William P. Saunders has been made vice chairman.

FOR KNITTING OR WEAVING

Insist on

AMERICAN & EFIRD YARNS

® AMERICAN DURENE* As advertised in leading magazines

NATURAL YARNS
Combed Peeler or Sak, 16's-90's Single
Combed Peeler or Sak, 10's-100's 2 Ply
Carded Peeler, 8's-30's Single

THREAD DIVISION LAWRENCEBURG, KENTUCKY

ALSO SYNTHETICS AND WORSTED YARNS

AMERICAN & EFIRD MILLS, INCORPORATED
Mount Holly, North Carolina • W. H. SUTTENFIELD, Vice President and Sales Manager
Successors to American Yarn & Processing Company and Efird Manufacturing Company

MOUNT HOLLY, N. C. — Mr. C. E. Wood; Mr. L. H. Abernathy; Mr. T. J. Davis
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CHATTANOOGA, TENN — Mr. H. W. Davenport, 328 James Bldg.
BOSTON, MASS — Mr. L. T. Hosack, 222 Summer Street
PHILADELPHIA, PA — Mr. Wm. Montgomery, 1700 N. Broad Street
ALBEMARLE, N. C. — Mr. A. K. Winget
CHICAGO, ILL. — Wood & Hutchinson, 222 W. Adams Street
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NARROW FABRICS LOOMS FOR ALL PURPOSES
WEBBINGS—LABELS—VELVETS—ELASTICS
65 YEARS EXPERIENCE
JAKOB MÜLLER, FRICK (SWITZERLAND)
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SAVE UP TO $800 YEARLY *with the right* **SHUTTLE FUR**

- *FREE BULLETIN SHOWS HOW to SAVE on SHUTTLE FUR*
  For the best weaving results—give us a trial on your shuttle fur requirements
- *FREE SAMPLES OF SHUTTLE FUR*
  In any width or grade. Also whole hides from Australian, Brown and Gray Opossum
  WRITE TODAY FOR PRICES AND SAMPLES

MORRIS FUR COMPANY
P. O. BOX 816 • *Phone: 6-5934* • BURLINGTON, N. C.

Style 2500.

STAHMER WET PROCESS WOOD SOLE SHOES
Protects the Feet

Water, chemicals and dyes rot out leather and rubber soles causing injury to workers' feet. The long wearing lightweight maple soles on Stahmer Shoes give protection plus comfort, and prevent slipping. Heavy leather tops are double stitched and riveted. Cut down accidents and expensive layoffs. Buy direct from manufacturer. Price as low as $2.90 a pair. Sizes 5 to 12. Send for Catalog 43.

STAHMER SHOE COMPANY
Davenport, Iowa

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ENGINEERING APPRAISALS
For All Valuation Purposes

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STOP STATIC SAFELY!
With Oxy Neutralizer "Cold" Bar!

● Completely eliminates annoying, costly static on any machine. ABSOLUTELY SAFE — no arcs, shocks or sparks. Thousands in use. "Cold" Bar easily installed. Operates electrically. No maintenance needed. Completely guaranteed. Send us details of any machine which is giving you static trouble. We'll submit recommendations without obligation.

HERBERT PRODUCTS Inc. 74-34 JAMAICA AVE. WOODHAVEN 21, N. Y.

YOU NEED THESE
more efficient
MARKING CRAYONS

ATLANTIC TEXTILE MILL CHALK CRAYON for use with all type bleaches. Colors.

NO. 295 MARKING CRAYON
for silk, rayon, similar fabrics.
Washes out. Colors.

BINNEY & SMITH CO.
41 E. 42nd St., New York 17, N. Y.

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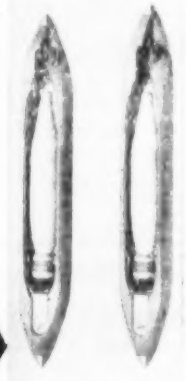
Celebrating 50 Years of CRAYOLA® Leadership

HAVE YOU TRIED THEM?



. . . Watson-Williams' newest additions—shuttles for Draper Looms, fitted with Cast Iron Eyes, to accommodate a longer filling package. Left—15⅛" long. Right—15¾" long.

WATSON-WILLIAMS Mfg. Co.
MILLBURY, MASSACHUSETTS
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Watson & Desmond, Box 1954, Charlotte, N. C.
Arthur J. Bohan, P. O. Drawer 779, Greenville, S. C.
John Wyatt, P. O. Box 701, Greensboro, N. C.
NORTHERN REPRESENTATIVES:
Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.
Sutton M. Ebert, P. O. Box 7144, Elkins Park, Philadelphia, Pa.
WESTERN REPRESENTATIVE:
Francis B. Wells, 805 Linwood Avenue, La Porte, Indiana

The Kuljian Corporation
RAYON PLANTS & TEXTILE MILLS
KULJIAN
• DESIGN
• CONSTRUCTION
• MANAGEMENT
1200 N. BROAD ST., PHILA. 21, PA.
MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA

News About MEN

(Continued)

Wilfred D. Rochon has accepted a position as overseer of dyeing and **Clarence Leach** as superintendent of spooling, dressing, and weaving at Atlantic Mills Div. of A. D. Julliard & Co., Providence, R. I.

William C. Ross, general superintendent of Baltic Mills of American Woolen Co., Enfield, N. H., has been made resident manager of the company's new plant at Tifton, Ga.

Herbert H. Schell, for many years president and general manager of Sidney Blumenthal & Co., Shelton, Conn., has been elected chairman of the board and is still chief executive officer. **John R. Simpson** has retired as board chairman but continues as a director. **Andre Blumenthal** has been named president.

Edward F. Silk has been made plant manager of Seymour Woolen Mills, Seymour, Ind. Mr. Silk resigned several months ago from his position as superintendent of Atlantic Mills of A. D. Julliard & Co., Stottville, N. Y.

Peter D. Stalker, superintendent of Webster Mills of American Woolen Co., Webster, Mass., has accepted a similar position with M. T. Stevens & Sons Co., North Andover, Mass. Mr. Stalker was previously general superintendent of American's Assabet Mills, Maynard, Mass.

Stewart M. Thompson, for the last nine years with Burlington Mills Corp., Dublin, Va., has been named superintendent of the rayon department of Riegel Textile Corp., Ware Shoals, S. C. He succeeds **J. J. Valter**, resigned.

OBITUARY

Harry B. Benson, 54, vice president of Cheney Brothers, Manchester, Conn.

Walter E. Blair, assistant to the president of Solvay Process Div., Allied Chemical & Dye Corp., New York, N. Y.

William W. Collins, 73, head of William W. Collins & Son, Central Falls, R. I.

Arthur F. Gallagher, 42, chief chemist for Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass.

Aaron Greenberg, 79, general manager of Samson Worsted Mills, Inc., Philadelphia, Pa.

John Everett Hamilton, 73, president of Cotton Mill Machinery Corp., Charlotte, N. C.

Charles F. Havey, 76, president of Saquoit Silk Co., Inc., Scranton, Pa.

Alexander F. Ix, president of Frank Ix & Sons, Inc., New York, N. Y., and president of the National Federation of Textiles, Inc.

Alexander McEvoy, manager of Ballston-Stillwater Knitting Co., Ballston Spa, N. Y.

James Henry McLaney, 33, vice president of Southern Pines Mills, Inc., Elizabethtown, N. C.

Dr. Thomas Nelson, 80, dean emeritus of the School of Textiles, North Carolina State College, Raleigh, N. C.

Thomas Schofield, 53, superintendent of Akwright Finishing Co., Fiskeville, R. I.

George R. Spencer, 83, organizer of Ruby Cotton Mill, South Gastonia, N. C.

William S. Thompson, Sr., retired president of Supersilk Hosiery Mills, London, Ont., Canada.

Alexander Hope Wilson, 70, retired superintendent of Riverside Woolen Mills, Stafford, Conn.

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at the following plant locations:

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Send complete resume indicating location desired to Personnel Department A.

CELANESE CORP. OF AMERICA
180 Madison Ave.
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Knit goods dyeing and finishing plant; fully equipped, seeking a man who can take over complete charge of mill, capable of finishing cotton, worsteds and woolen fabrics.

P-7927, Textile World
330 W. 42 St., New York 36, N. Y.

BOSS DYER

Wanted for piece goods; experienced with developed, union and wool colors. Excellent position for capable man.

P-7926, Textile World
330 W. 42 St., New York 36, N. Y.

SOUTHERN PLUSH MILL WANTS
QUALIFIED ASSISTANT TO SUPERINTENDENT
EXCELLENT OPPORTUNITY
PLEASE GIVE QUALIFICATIONS

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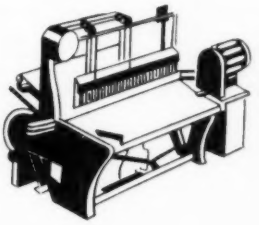
330 W. 42 St., New York 36, N. Y.



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This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.)

Just send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., New York 36, N. Y.

Please help us locate the following used equipment:

NAME..... TITLE.....

COMPANY.....

STREET.....

CITY..... ZONE..... STATE.....

6/53

Liquidation Sale

REAL ESTATE MACHINERY

and Equipment Formerly of

MYERSTOWN MANUFACTURING CO.

Mfrs. of Cottons, Rayons, Acetates and Nylons

540 S. Cherry Street, Myerstown, Pa.

Between Reading and Lebanon

Thursday, June 11, 1953, at 11 A. M.

Daylight Time, on the Premises

REAL ESTATE: Approx. 2 acres improved with a modern 1-sty and basement Brick and Concrete Mfg. Bldg. approx. 45,000 sq. ft. Broker Participation.

MACHINERY: 4 Whitin' Schweiter Auto Bobbin Winders, Van Vlaanderen 5 and Johnson 7 Stainless Steel Drum Slashers, Barber Coleman Warp Tying Machine, Allen 72" MD Warper, 3 Sipp Eastwood and Watson Flag 72" Warpers, 4 Sipp Eastwood and Reiner Auto Creels, Abbott 1950 Auto Quiller, Terrell Bobbin Stripper, 6 Universal Winders, 60 Draper Modified D 52" M. D. Auto Cam Looms, 96 Draper Model K Motor Driven Auto Cam and Dobby Head Looms, 64 Draper Model K 44" M. D. Auto Cam Looms, 18 Draper Model E 52" M. D. Auto Cam Looms, 4 Hermas Inspection Perches, West, Air Compressor Unit, Repair Parts, Bobbins, Reeds, Frames, Electric Motors, Hoists, Trolleys, Tracking, Scales, Office Furniture, Etc.

Descriptive Illustrated Catalogue Upon Application to

SAMUEL T. FREEMAN & CO. Auctioneers

1808-10 CHESTNUT STREET, PHILADELPHIA 3, PA.

80 Federal Street, Boston 10, Mass.

MEN WANTED

POSITIONS OPEN

We can place—SUPTS., overseers, knit. mach. and sew. mach. fixers for tricot, underwear, sweater and hosiery mills; rayon cloth supt.; stylist upholstery and drapery fabrics; asst. supt. garnetting and picking; pilot plant research dissolving pulp man; personnel and industrial rel. mgr.; designers and asst. designers for worsted, woolen, cotton, synthetic yarn and pile fabrics; quality control man for cot. thread mill.

OVERSEERS for cutting and sewing knit goods; dyeing and finishing combined knit. fabrics; woolen finish.; worsted spin., worsted twist.; shoddy card.; worsted card.; rayon wind. (foreign); cot. card. and spin. (foreign); rag picking; woolen weav. and dress. combined; package dye., 3rd shift; finishing woolen, woven and knitted fabrics, also pile fabrics; worsted pin drafting; raw stock dyeing, 2nd shift; cotton spin., wind., and warp. (foreign).

SECOND HANDS for woolen card.; cot.-rayon weaving. Section hand drawing; garnetting foremen and fixers; belting salesmen; training supervisor; trainee for wool blending.

MASTER MECHANICS; plant engineers and asst. plant engineers; elect. engineers, designers and draftsmen; construction mechanical engineer; chemists, chem. engineers and laboratory men for mills, also for demonstrating and selling; industrial engineers; fixers woolen frames and mules; cot. card grinders; sew. mach. fixers; salesman to sell paper makers' felts.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills. SEND US YOUR RESUME.

CHARLES P. RAYMOND SERVICE, Inc.

294 Washington St. Boston 8, Mass.

Telephone Liberty 2-6547

SPECIALISTS IN PLACING AND IN SUPPLYING TEXTILE MILL EXECUTIVES

MILL EXECUTIVE

. . . now with worsted weaving mill, also diversified experience in woolens and rayon wishes opportunity to manage your plant. University trained, textile schooling, age 31, administrative and production background, stylist, initiative, a good organizer. Salary plus profit-sharing or stock-option plan.

PW-7957, Textile World
330 W. 42 St., New York 36, N. Y.

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MACHINERY and EQUIPMENT
of
ONEIDA BLEACHERY

NEW YORK MILLS, (NEAR UTICA) NEW YORK

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James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.

Telephone 8-5616

SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

REPEAT LINES WANTED

Manufacturers representative looking for lines or specialties to New England Textile Plants. Preferable to Card, Weave, Spinning and Shipping Departments. Contacts built up over a 15 year period. Practical and Textile School background. Guarantee satisfactory presentation and intelligent follow-up.

R. B. DARCEY, P.O. Box 384, Woonsocket, R. I.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ACCOUNTANT. DEGREE in accounting. Two or three years experience in textile accounting preferred. Desirable New York State location. P-7884, Textile World.

WANTED: OVERSEER of Finishing in a Plush Mill making all types of fabrics. When replying, please state past experience, age and any other information. A good position and salary for the right man. This will be kept strictly confidential. P-8012, Textile World.

SALES BUILDER. Splendid opportunity for dynamic sales builder about 35 as Sales Manager for Textile Chemicals Division of progressive basic chemical manufacturer with up-to-date line of textile detergents, emulsifiers, finishes, fiber lubricants, etc. Complete support in form of sales service facilities and technical know how. Only men with proven record and ability to expand and guide sales organization need apply. Send resume including earnings in confidence. P-7786, Textile World.

POSITIONS VACANT

CHEMICAL ENGINEER. Young, 3 to 4 years' experience with foam rubber processing. To develop foam rubber products and methods. Large corporation. Send complete resume and salary requirements. P-7807, Textile World.

WANTED—LOOMFIXER—Age 35 to 45. Ribbon looms. Supervisory ability. Plant located metropolitan area of New York. State qualifications, salary, etc. P-7943, Textile World.

POSITIONS WANTED

OVERSEER OF weaving available now employed—Excellent quality and efficiency record. Experience includes both Draper & C&K looms & all synthetic fibers. Capable training own help. Hygrade man. Best of references from employers as well as Textile School. PW-6952, Textile World.

WANTED—POSITION as manager or superintendent for combed or carded cotton mill. College graduate textiles, experienced in manufacturing, cost and industrial engineering. Now employed as superintendent of a progressive combed yarn and weaving mill in South. PW-7795, Textile World.

POSITIONS WANTED

THROWING SUPERINTENDENT, employed at present as superintendent of a throwing plant, desires connection with a reputable concern that is in need of a man with a good sound knowledge in throwing silk, rayon or nylon yarns, that can assume full responsibility, decrease mill cost, increase quality and production having a good labor relations record. Married, references. PW-7892, Textile World.

MANAGER, SUPT., or Asst. Supt. good knowledge of all departments in cotton manufacturing, also production and quality control. Over twenty years experience, have record as producer desires position with progressive organization. University training in Business Management and Industrial Organization. PW-7938, Textile World.

WEAVING OVERSEER Available—Thoroughly experienced mechanical and supervisory all operations from yarn to cloth off loom. Experienced all types C&K looms. Able to handle all types of help. Good work and character references. PW-7537, Textile World.

POSITION WANTED as Production or Assistant Superintendent. Heavy experience in Training, Production Control, Waste, Quality, and Labor cost Control. College man, Southerner, in middle thirties, with 13 years experience in Cotton and Woolen industries. Now employed but desire increases responsibilities. PW-8051, Textile World.

Business Opportunity and Wanted Advertising on Page 320

There's still time to save

WEAVING & THROWING EQUIPMENT & SUPPLIES

Million Dollar Liquidation at
Standard Silk Division
A. D. JUILLIARD & CO.
Chadwicks, N. Y.

sold as INDIVIDUAL ITEMS!

we are EXCLUSIVE AGENTS!

NEW ATWOOD UNIRAIL
Model #501 Dbl. Deck
NYLON TWISTERS
AT A FRACTION OF ORIGINAL COST!

28—184 spindles ea. 12—220 spindles ea. Erected but NEVER USED! Brand new take-up shafts, spindle bobbins and stainless steel bobbin trays for Nylon.

48 — C & K — S-6 — 56"
1949-1950 LOOMS
LIKE—NEW CONDITION—
LOADED WITH ACCESSORIES

Complete with beams, heddles, quills, harness frames, etc. 56" between swords, 2x1 box, 20 harness #7 Dobbies 15/32 guage double index. 1 HP G. E. motor. Roller bearings crank and bottom shafts. Warp stop 6 bank KA elec. 3 shift Veeder Root pick counters and cut meters.

8—1948 Atwood D.D. Twisters
Mod. 110. Motorized. 208 spindles ea. 1 lb. pkge.

52—44" Draper XK's
Motorized, automatic. Complete with beams, drop wires, heddles, etc.

1—1951 Sipp Eastwood Warper
101" horizontal. To take 28" flange beam.

7—Atwood Motorized 1949 Redraws
High speed. 68 spindles ea. 1 lb. or ½ lb. pkge.

4500 sq. ft. Humiducts and Air Conditioning
Comp. with compressors and all motorization.

24—Spindles Whitin Schweiter
1948-49. Auto. quilling. Take 10⅛" bobbins.

2—1949 Atwood motorized D.D. Utility Twisters
204 spindles ea. ½ lb. pkge. 5" spacing.

1—1951—860 End Cone Creel
Sipp Eastwood. Magazine type to take 4 lb. cones.

6—Atwood 10B Doubler Twisters
Motorized. 100 spindles ea. 1 lb. pkge. 6" spacing.

Many other items, too . . . all in excellent condition. Advise us of your needs . . . we'll make every effort to serve you.

24—72" C&K 5-6 Looms
Motorized. Automatic.

6—Rebuilt Fletcher Narrow Fabric Looms
Standard 15'-8". Motorized. 42" & 18" beams.

24—Universal #50 Corners for NYLON
Rebuilt. Roller bale pineapple attachment. 3-30" gear gain boxes. L-drive. Anti-wear tensions. Motorized. 6 spindles per machine. 60 SPINDLES 1952 UNIVERSAL #250 NYLON SIZING MACHINES. Complete in every detail.

7—1947 Reiner Tricot Machines
168". 28" guage. Motorized 220-440.

1—1946 Cocker Warper
For 21x21 beams. 14 yard let-back, rheostat and variable speed drive. Motorized.

All items subject to prior sale.

WRITE—WIRE—OR PHONE, TODAY!

Wm. Rabinowitz & Sons
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

S&K Where your $$$$ buy MORE

78—S3 AUTO C&K LOOMS 52" 2x1

24—S5 AUTO C&K LOOMS 60" 2x1

1 3 Color-60" Print Machine
3 Hercules 48"-60" Extractor
300 Auto Drapers 43" to 76" cloth
16 C&K Auto Bob Changers 2x1—72" R.S.
12 C&K 4x4—54" R.S.
40 C&K Woolen Looms 72" to 110" R.S.
1000 Electro Rods 66" to 133"
1 V.V. 40'-60" Tenter Frame, Enclosed Gears
1 V.V. 60'-66" Palmer Tenter, Unit, Complete
1 36" Self Balancing Extractor
1 W&J Tenter Frame 90" W 30' L
1 W&J Tenter Frame 54" W 30' L
1 2 Roll 60" Quetch—V.V.
1 Set of 8—68" Copper Cans
1 New 80½ Beamer
1 60" wide Pin Tenter Frame 60'—W&J
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 10 Dry Cans 48" face
6 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
3 V.V. Button Breakers 1—60" 2—50"
4 Three (3) Roll Padders 45"
30 50" Dry Cans
4 Johnson Slashers—7—5—3 Can 66"
2 90" S.S. Jiggs
4 50" S.S. Jiggs
1 72" Greige Washer with Squeeze Rolls 24' long
5 Atwood 5B Twisters
9 Atwood Single Deck Utility Spinners
8 Sipp Warpers and Winders
20 #90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
5 Foster-Coners 75A
Hy-speed Sippwarper

STAVE & KESSLER
106 KEARNEY ST. P. O. Box 1611 Paterson, N. J.
Phone ARmory 4-7486

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DRAPER "XD", DOBBY, 1952, WITH DIEHL DRIVE

WHITING AUTO QUILLERS 1947, 1948—EXCELLENT CONDITION

ABBOTT AUTO. QUILLERS.
C&K W2 LOOMS 4x1 AUTO.
DRAPER "XK," CAM. 42".
JOHNSON SLASHERS
TERRELL BOBBIN STRIPPER

S-3, 2x1, 56" RS, AUTO.
Shuttle Change
C & K 2x1, 54" RS. AUTO.
Bobbin Change
ENTWISTLE WARPER & CREEL

THEODORE BIALEK & CO.

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PATERSON, N. J.
LAMBERT 3-5886-7

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
LONGACRE 3-4978-9

FOR SALE:

32 Fletcher, 22 Ft. Ribbon Looms

Individual motor drives and completely equipped with large steel warp beams, modern double-deck battens and harness. Spaces from 18 to 96 to weave from 6" to ½" widths.

These looms are surplus due to expanded multi-shift operation. They have been in use and properly maintained right along.

Write: **FS-7839,** Textile World
330 West 42nd Street, New York 36, N. Y.

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies

BOUGHT AND SOLD
Warpers • Winders & Quillers
Looms

FOR SALE

100 TON, TWO ROLL PERKIN SCHREINER CALENDER
61 INCH FACE

Chrome plated, chilled iron roll. Spare cotton roll included with motor and all electrical equipment.
Machine in excellent condition throughout, and is in operation.

MR. J. GOULD
NEWPORT FINISHING CORP.
168 Stevens St. Fall River, Mass.

HOSIERY MACHINES
used and rebuilt
KNITTERS—RIBBERS—LOOPERS
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

FOR SALE
2—OL 30 sp. Cop winders rebuilt
1—15 spdl. Lazenby winder.
2—#50 Universal coners, pineapple att.
2—100 Spdl Sipp winders
2—60 sp. Sipp winders
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Searchlight Section

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1—**REBUILT** P. & S. WASTE CARD, 1942 Model, ALL IRON, 60" x 32" Dia. Pinned Cylinder, Wood Slatted Feed Table, Feed Rolls, 2 Workers 8" Dia., 2 Strippers 4" Dia., Double Doffers 16", Clothed Metallic Wire.

30—Schlumberger Delete WOOL CARDS, Spiral Fluted Detaching Rolls, 5 rows Pinning, Set Over 10-3/8, operated at 120 strokes per minute on Wool Stock averaging 1¼" in length.

1—**NEW** P. & W. Springfield 66" DOUBLING, WINDING & MEASURING MACHINE, Serial #9286, Durant Productimeter Clock, V-Belt Motor Drive, 2 H.P. 220/2/60 A.C.

1—Hunter RAW STOCK DRYER, 6 Section Unit, agitating type, 60" wide on apron, 6 motor driven fans, capacity 900 lbs., Hopper Feeder included.

1—**REBUILT** Hunter CONE DUSTER, 6', with wood slatted feed table, 2 feed rolls, top pinned, bottom fluted, with 10 H.P. 220/3/60/720 RPM Motor.

1—**REBUILT** Tolhurst Open Top EXTRACTOR, 48" Copper Basket, Self Balancing Unit, Safety Cover, Vertical Side Mounted Motor 7½ H.P. 220/3/60 A. C. V-Belt underneath Drive.

1—**REBUILT** Harwood 60" PICKER FEED. Inclined apron 61" long with approx. 61 pins, ½" long per row, from front top of box to inclined apron 48", from bottom of box to comb 50", Metal Doffer Roll with 4 brush slats.

8—Whitin 48" SCOTCH CENTER DRAW BROAD BAND FEEDS, 1949 Model, J1 Card Conveyors, Model F1 Finisher Feed Tables with Feed Rolls, Metallic Lickerins.

1—Hunter GARNETT, 3 cylinder 30" x 60" with Hopper Feed, Breast. Each Cylinder equipped with 10 workers, 1 fancy, 1 fancy stripper, 1 angle stripper and 26" Dia. Doffer.

1—P. & S. GARNETT, 2 cylinder 20" x 60", with full complement of workers, fancies, strippers, etc., with Double Doffers.

6—C. & K. W3 LOOMS, 1947 Model, 76" Auto. 4x1, 25 harness, Multipliers, 1½ H.P. 550/3/60 A.C. Motors.

24—C. & K. W1 LOOMS, 82", Auto. 4x1, 25 harness, E.W.S.M., 1 H.P. 550/3/60 A.C. Motors.

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1—**REBUILT** D. & F. 86" Double Acting NAPPER, 24 Double Belt Driven Working Rolls, Folder Takeoff. Good useable Card Clothing.

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1—Bruckner CARPET SHEAR, 20' with 2 sets Cutting Parts, Motorized, and extra motor for carpet drive. Handle roll to roll.

3—R. Hunt TIGHT STRAND WASHERS, 11', Type TSP, Stainless Steel, Enclosed, 3 compartment units, wring master air controls, 1946 Model.

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8000 Fibre Head Spools—Size 4" x 6"—Bore 1" Brass sleeve.

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2—V. V. G. L. Rope Washers, 18 compts. Age 1948
1—Stainless Steel Hi-Speed Slack Rope Washer, 55 compts. 1948
1—Textile Friction Calendar, 54" wide, 40 ton pressure, motorized screw
1—Andrews & Goodrich Raw Stock Dryer 35' long, metal conveyor
8—Guskin Plush Looms 64" wide, complete w/ motor
1—Van Vlaanderen Tenter Frame 40' long x 60" wide, drive & motor
1—Van Vlaanderen Tenter Frame 50' long x 60" wide, drive & motor
1—Vacuum Extractor 50" wide w/ Nash L4 Hytor pump, 10 hp motor
1—Set Copper Dry Cans, 23 cans 60" wide x 23" bucket
50—Drying Cylinders 46" wide x 48" diameter, chrome plated, 100# pressure
1—Stainless Steel Complete Warp & Beam Dyeing Unit
1—Smith Drum 1000 lb. S. S. Package Drying Unit 1948
2—Johnson 5-drum Slashers, 60" wide, 1947
1—Entwistle Hi-Speed Warper 54", w/Sipp mag. cone creel 960 ends
48—Crompton & Knowles W3 Looms, 82", 25 harness, motor Age 1946-49
48—Whitin Twisters, 3" ga., 1-¾" ring, tape drive, 240 spdls.
12—Whitin Twisters, 4" ga., 2-½" ring, tape drive, 228 spdls.
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56—Whitin Cards, 40" wide, 27" doffer, 12" coiler, 100/110 wire, spindle back

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2—48" D. & F. Fearnought Pickers
6—18"–24" Shoddy or Waste Pickers
2—36"–48" Burr Pickers
2—Dusters, Cone or Box type
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1—P. & S. Truck Skein Dryer, 1939
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1—Wetting-Out Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72", Yorkshire Type
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2—Teasel Gigs, Doub. Cyl., 60"
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1—Nash No. 4 Hytor Pump
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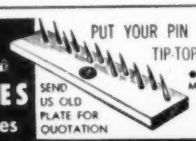

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1—Smith-Drum CSD Type Skein Dyer ..... Lot #26041

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C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
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R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting, and Winding Equipment and Supplies

An * indicates additional data in the 1952-53 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acme Coppersmithing Co.	274	E
Acme Steel Co.	231	P
Alemite Div., Stewart-Warner Corp.	156	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	286	O T
*Allentown Bobbin Wks., Inc.	216	
Allis Co., Louis, The	203	F
*Allis-Chalmers Mfg. Co.	53 to 56	F Q
American Crayon Co.	291	F L R
American & Efird Mills, Inc.	313	G
*American Lava Corp.	185	L RT
American Lumber & Treating Co.	238	B
*American Monorail Co.	221	P
American Schweiter Co.	19	T
American Viscose Corp. (Yarns)	281	G
American Viscose Corp., Textile Chemical Dept.	14	C
Armour & Co., Industrial Soap Dept.	241	C
Armstrong Cork Co. (Cots)	66-67	T
Armstrong Cork Co. (Roll Covering)	199	R
Arnold, Hoffman & Co., Inc.	35	C
*Ashworth Bros., Inc.	226	T
*Atkinson, Haserick & Co.	20 to 23	T
Atlantic Chemical Corp.	187	C
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*Barber Colman Co., Textile Div.	305	R
Barco Mfg. Co.	240	H
Barnes Textile Associates, Inc.	304	N
Bemis Bro. Bag Co.	218	P
Bendix Aviation Corp., Eclipse Machine Div.	283	T
*Bersworth Chemical Co.	291	C
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*Booth Co., Benjamin	202	T
Bryant Chemical Corp.	152	C
Buffalo Pumps, Inc.	80	H
*Bullard Clark Co., Jacobs Northern Div., E. H.	165	R
*Butterworth & Sons Co., H. W.	144	E
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*Caldwell Co., Inc., W. E.	307	B E
Carbide & Carbon Chemicals Co., Textile Fibers Dept., a div. of Union Carbide & Carbon Corp.	239	G

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CLINTON IOWA

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FLOR • TONE

CUTS MAINTENANCE COSTS!

Mill payroll records show that Selig's famous dry method for low-cost, long wearing upkeep of wood or concrete mill floors drastically reduces labor costs.

FLOR-O-SEAL *penetrates*

Flor-O-Seal hardens and prevents dirt, grease, and moisture from filling porous structures of flooring. Easily applied with mop or squeegee.

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Since 1896

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DALLAS NEW ORLEANS HOUSTON

Carborundum Co.	254	T
Carniti & Co., A.	47	T
*Carroll & Co., J. E.	309	E
Celanese Corp. of America, Chemical Div.	263	C
Yarn Div.	255	
Century Electric Co.	38	G
Chemsteel Construction Co., Inc.	310	F
Chesapeake & Ohio Railway	244	B N
*Chicago Pneumatic Tool Co.	84	H
Ciba Co.	73 to 76	C
Cities Service Oil Co.	179	M
Clark Equipment Co., Industrial Truck Div.	242	P
Clark Mfg. Co.	210	H
Cleaver-Brooks Co.	163	Q
Clinton Foods Inc.	323	C
*Cole Mfg. Co., R. D.	272	B E
Colgate-Palmolive-Peet Co.	6	C
*Colson Corp.	270	P
*Continental-Diamond Fibre Co.	288	P
*Cook-P & N Machine Co., Inc.	154	E
Corn Products Refining Co.	261	C
*Crane Co.	86	H
Crane Mfg. Co.	276	L
*Crompton & Knowles Loom Wks.	13	R
Cross Cotton Mills Co.	87	G
Crucible Steel Co.	45	O
*Curtis & Marble Machine Co.	270	T
Dana Warp Mills	307	G
Daniels, Inc., C. R.	266	P
*Darnell Corp., Ltd.	264	P
*Dary Ring Traveler Co.	284	T
Dayton Rubber Co., The	50-51	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	307	T
Dixie Leather Corp.	148	R
Dolge Co., C. B.	279	B
Dow Chemical Co.	150	C
*Dow Corning Corp.	295	C
*Draper Corporation	1	R
*duPont de Nemours & Co., E. I., Electrochemical Dept.	259	C
Textile Fibers Dept.	188	G
*Durant Mfg. Co.	312	K
Durkee-Atwood Co.	197	Q
*Economy Baler Co.	307	P
Edroy Products Co.	306	N
Eisenberg Fibers, Inc.	307	G
*Eriez Mfg. Co.	236	T
Fafnir Bearing Co.	81	O Q
Fairbanks Co., The	256	P
Fairbanks, Morse & Co.	287	K
Falls Yarn Mills	276	G
Felters Co., The	198	L RT
*Fidelity Machine Co., Inc.	220	L
Fielden Inst. Div., Robertshaw-Fulton Controls Co.	258	K
*Fletcher Works	275	E
*Foster Machine Co.	36	T
*Frankl Associates, Ernest L.	313	R
Franklin Process Co.	225	G
*Fuller Brush Co.	204	T
Gair Co., Inc., Robt.	208	P
Gardner-Denver Co.	65	H
Gastonia Textile Sheet Metal Wks., Inc.	326	T
Gaylord Container Corp.	161	P
Geigy Co., Inc.	2	C
General Chemical Div., Allied Chem. & Dye Corp.	201	C
General Dyestuff Corp.	243	C
*General Electric Co.	10	F Q
*Gessner Co., David	297	E
Glasco Equipment Corp.	246	E
Goodrich Chemical Co., B. F.	214	C
Goodyear Tire & Rubber Co., Chemical Div.	9	C
Graton & Knight Co.	148	R
*Grinnell Co., Inc.	12	H
Gulf Oil Corp.—Gulf Refining Co.	70-71	M
Hartford Machine Screw Co.	177	T
*Harwood & Son, Geo. S.	279	T
*Haskell-Dawes Machine Co., Inc.	276	T
*Hayssen Mfg. Co.	183	P
*Heim Co., The	24	R
Heineman Corp., O. Div. of Aetna Industrial Corp.	310	G
Herbert Products, Inc.	313	T
*Herr Mfg. Co., Inc.	269	T
Hinde & Dauch	196	P
*Howard Bros. Mfg. Co.	39	T
Hubinger Co., The	249	C
*Hunter Machine Co., Jas.	32-33	E
*Hunt Machine Co., Rodney, Textile Machinery Div.	27	E
*Huyck & Sons, F. C.	304	E
Hyatt Bearings Div., General Motors Corp.	223	O Q

*Ideal Industries, Inc.	42	I
Industrial Brush Co.	282	E
*Industrial Heat Eng'g. Co.	268	E
Industrie-Werke-Karlsruhe	325	E
Ingolstadt	307	I
Iselin & Co., Inc., Wm.	271	N
*Ives Co., L. T.	290	L
*Jacobs Northern Div., E. H. The Bullard Clark Co.	165	R
*Jenkins Sons Inc., M. W.	212	E
*Jiffy Textile Marker Co.	312	E L R
Johnson Machine Wks., Chas. B.	262	R
Johnson Service Co.	194	K
Keever Starch Co.	213	C
Kessler Trucking Co.	279	P
*Kidde & Co., Inc., Walter	233	B
*Kold-Hold Mfg. Co.	209	E O
Kuljian Corp., The	314	N
*Lambeth Rope Corp.	291	RT
*Laurel Soap Mfg. Co., Inc.	268	C
Lazenby Co., F. A., The	280	T
*Leighton Machine Co.	206	L
Lincoln Engineering Co.	181	M
*Link-Belt Co.	7, 69	Q
*Livermore Corp., H. F.	207	R
*Loper Co., Ralph E.	310	N
Main Co., Chas. T.	313	N
Manhattan Rubber Div.	77	Q
*M-B Mfg. Co., Inc.	245	L RT
Meadows Mfg. Co.	34	Q
*Meese, Inc.	306	P
*Merrow Machine Co.	297	E
Micro Switch Div.	250	F
*Milton Machine Wks., Inc.	303	R
Minneapolis-Honeywell Reg. Co., Industrial Div.	82-83	K
Micro Switch Div.	250	F
Minnesota Mining & Mfg. Co.	217	E R
*Monsanto Chemical Co., Textile Chemicals Dept.	57	C
Morris Fur Co.	313	R
*Mt. Hope Machinery Co.	169	E R
Müller, Jakob	313	
National Aniline Div., Allied Chem. & Dye Corp.	17	C
National Ring Traveler Co.	311	T
Naugatuck Chemical Div., U. S. Rubber Co.	193	C
New Departure Div., of General Motors	15	O Q
Noone Industrial Fabrics Div., Kenwood Mills	235	G
Nopco Chemical Co.	59	C
Norris Bros.	280	R
Oakite Products, Inc.	298	C
Pabst Sales Co.	300	C
Page Fence Association	301	B
*Parks-Cramer Co.	215	A D
*Perfecting Service Co.	234	H
Permutit Co.	302	B
Pfister Chemical Works	309	C
Pfizer & Co., Inc., Chas.	171	C
Pittsburgh Coke & Chem. Co.	62	C
Pittsburgh Plate Glass Co., Fiber Glass Div.	247	G T
*Platt Bros. (Sales) Ltd.	20-21	T
Platt Freres S.A.R.L.	230	T
Platt Ltd., J. W. & H.	230	T
Pneumafil Corporation	18	T
Potts Co., Horace T.	273	H Q
Precision Gear & Machine Co.	308	T
*Prince, Smith & Stells	22-23	
*Proctor & Schwartz, Inc.	72	E
Raybestos-Manhattan, Inc., Manhattan Rubber Div.	77	Q
Rayon Information Center	88-89	N
Red Ray Mfg. Co., Inc.	308	E
Reeves Pulley Co.	78	Q
*Reiner Inc., Robert	16	L
*Rhoads & Sons, J. E.	5	Q
*Richards-Wilcox Mfg. Co.	68	P
Richmond Oil, Soap & Chem. Co.	282	C
*Ridge Tool Co.	191	H
*Robert & Co., Associates	2nd Cover	N
*Rohm & Haas Co.	175	C
Rome Soap Mfg. Co.	307	C
Ross Engineering Corp., J. O.	303	E
Ryerson & Son Inc., J. T.	146	O
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	19	T
*Scott Testers, Inc.	299	K
Scott & Williams, Inc.	301	R
Selig Co., The	324	D
SKF Industries, Inc.	91	O Q

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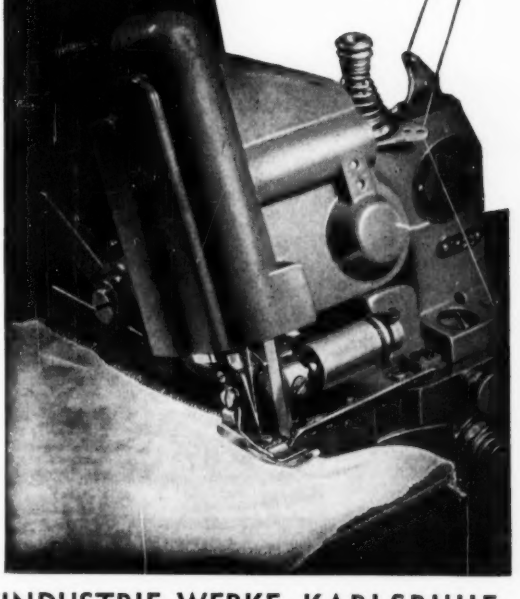

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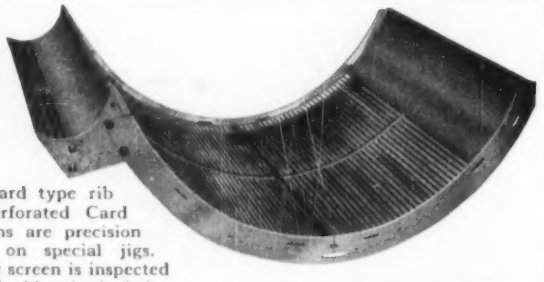

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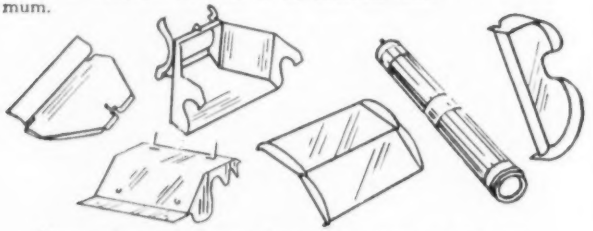

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Socony-Vacuum Oil Co., Inc.	25	M
Solvay Process Div., Allied Chem. & Dye Corp.	257	C
*Sonoco Products Co.	159	E T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	292, 293	R
Stanmer Shoe Co.	313	N
Stacey Mfg. Co., A. E.	80	C
*Standard Chemical Prod., Inc.	195	C
*Standard Pressed Steel Co.	289	O
Stanley Works, The	227	B P
Steelcote Mfg. Co.	296	B
*Steel Heddle Mfg. Co.	292, 293	R
*Stephens-Adamson Mfg. Co.	205	O Q T
*Sterling Ring Traveler Co.	266	
*Stewart Iron Works Co., Inc.	280	B
Sun Oil Co.	142	C
Superior Combustion Industries, Inc.	301	Q
*Supreme Knitting Mach. Co., Inc.	167	L
Swift & Co., Soap Dept.	253	C
Talcott, Inc., James	299	N
Taylor Instrument Cos.	46	K
Tennant Co., G. H.	224	B
*Terrell Machine Co., Inc.	265	RT
Textile Banking Co.	211	N
Textile Laboratories, The	312	E
*Textile Machine Wks.	40-41, 92	L
Thomson Industries, Inc.	252	O Q
Tide Water Assoc. Oil Co.	52	M
*Toledo Pipe Threading Mach. Co.	294	H
Toledo Scale Co.	260	K
*Tompkins Bros. Co.	228	L
*Torrington Co., The (Needles)	49	L
*Torrington Co., The (Bearings)	219	O Q
Tower Iron Works	248	L
Towmotor Corp.	200	P
Unionmatex, Textilmaschinen-Union, G.M.B.H.	37	E RT
*U. S. Rubber Co., Mechanical Goods Div.	285	Q
Naugatuck Chem. Div.	193	C
*Universal Winding Co.	8, 172	T
*Veeder-Root, Inc.	4th Cover	K T
Victor Ring Traveler Co.	64	
Virginia-Carolina Chem. Corp.	251	G
*Warner Electric Brake & Clutch Co.	28-29	F Q
*Warner & Swasey Co.	63	T
Watson-Williams Mfg. Co.	314	R
Westinghouse Electric Corp. Air Conditioning Div.	267	A
Lamp Div.	48	F
Motors & Controls	30-31	F Q
Textile Industry	60-61	Q
Weston Electrical Inst. Corp.	26	K
West Point Fdry. & Mach. Co.	44	R
Whitaker Co., Fred	222	G
White & Co.	232	A
Whitehead Engineering Co.	274	T
*Whitin Machine Works	58	L
Wildman Mfg. Co.	43	L
*Wolf & Co., Jacques	237	C
Wood's Sons Co., T. B.	303	Q
Yale & Towne Mfg. Co., The	229	P

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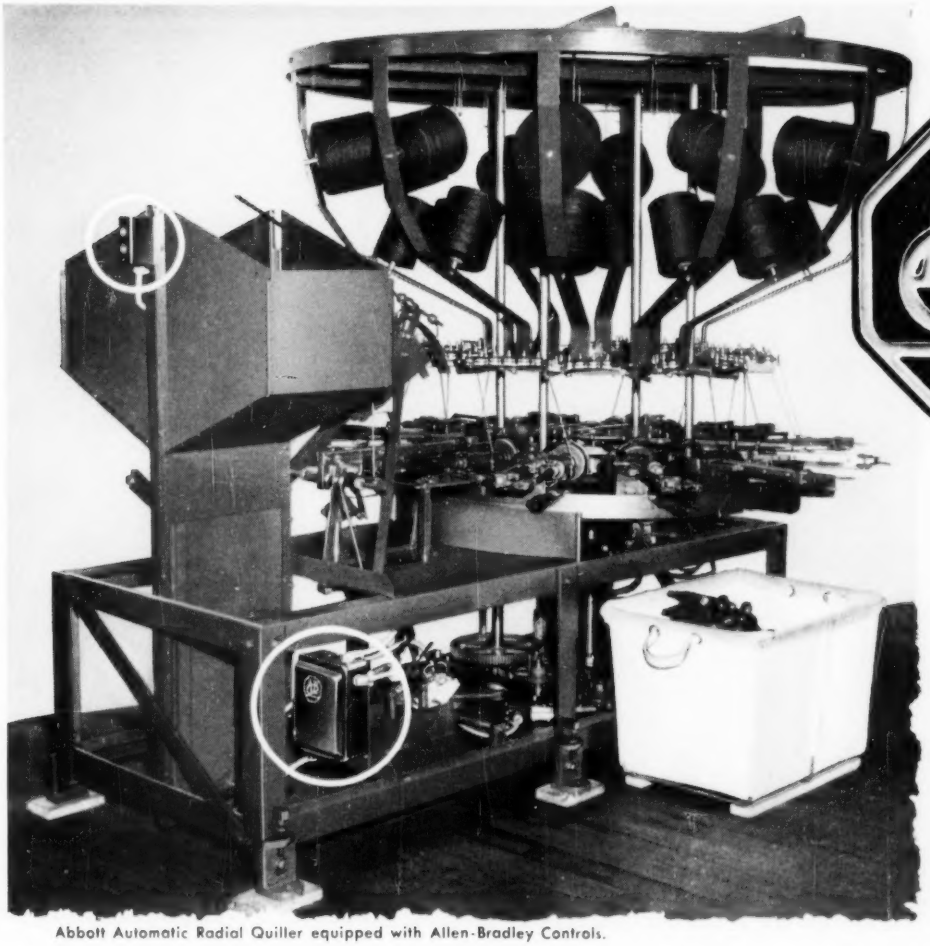

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RADIAL

QUILLER

equipped

with

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Controls

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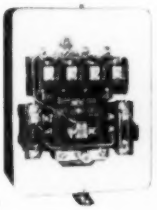

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Bulletin 800
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MOTOR CONTROLS FOR TEXTILE MILLS

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with

CUT METERS

on Your Looms

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